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INDEX TO VOLUME 75

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INDEX TO VOLUME 75

JANUARY TO JUNE, 1939

This is an alphabetical index of articles and discussions arranged by leading words. It contains occasional cross references. Names of authors and men who discussed the papers are also included. Details of society proceedings, including the titles of papers

read, officers elected, etc., can be located in proceedings under Societies, Editorials, News of the State, Marriages, Deaths.

The subjects of editorials also appear alphabetically and are marked (E).

A		
A. M. A. Disapproves health bill (E)	487	
Action Against A. M. A. (E).....	3	
Address. G. C. Otrich, Belleville, Ill.	351	
Aid for crippled children.....	13	
Ailes, Arlington. Discussion.....	126	
Alexander, Franz. Discussion.....	409	
Allen, Robert A. Paper.....	260	
Allen, Thomas B. Discussion.....	119	
Applequist, Leonard. Paper.....	272	
Aries, Philip L. Paper.....	131	
Autohemotherapy, Leo Saxon and John E. Stoll, Chicago.....	352	
B		
Bauer, W. W. Discussion.....	178	
Bay, Alfred Paul. Paper.....	369	
Beard, J. Howard. Paper.....	122	
Beck, Joseph C. Paper.....	182	
Becker, S. W. Discussion.....	151	
Benedek, T. Paper.....	247	
Benzedrine sulphate in depressions. Isadore Finkelman, Chicago, and Daniel Haffron, Elgin.....	264	
Berardi, James B. Paper.....	136	
Bettman, Ralph B. Paper.....	266	
Bigler, John A. Paper.....	46	
Blatt, Maurice L. Paper.....	545	
Blepharoconjunctivitis, Chronic. N. K. Lazar, Chicago.....	141	
Boemer, L. C. Paper.....	474	
Boudus, Thom. Paper.....	442	
Bosselman, Beulah. Paper.....	355	
Bovik, Leslie E. Paper.....	419	
Breed, J. Ernest. Paper.....	521	
Brown, Meyer. Paper.....	361	
Burstein, H. J. Discussion.....	151	
Business and the Doctor. (E).....	97	
Business meeting, Importance of. R. T. Pettit, Ottawa.....	413	
C		
Cancer control progress. (E).....	287	
California doctors rap health bill. (E)	392	
Carcinoma in benign ulcer. Max Mass and Frederick Steigmann, Chicago	120	
Cervical fasciae and neck infection. R. W. Kerwin, Chicago.....	69	
Cesarean section. Wm. Carl Stude, St. Louis.....	463	
Chancres of the cervix. Irving S. Schipper, Galesburg....	457	
Chiropractic Bill 282. (E).....	200	
Christoph, Carl. Discussion.....	72	
Clark, S. N. Discussion.....	173	
Clendening, Logan. Paper.....	416	
Cleft palate surgery. Louis W. Schultz, Chicago.....	127	
Cohen, Seymour J. Discussion.....	242	
Colitis, Chronic ulcerative. A. A. Goldsmith. Chicago	559	
Compulsory health insurance. J. R. Neal, Springfield.....	15	
Convulsions under ether. Frank J. Jirka and Frank C. Hofrichter, Chicago	549	
Corbus, Bud C., Sr. and Jr.....	19	
Coronary thrombosis increasing? (E)	189	
CORRESPONDENCE:		
Army approved. Harold M. Camp	104	
American board of obstetrics.....	501	
Cardiography	502	
Educational committee	500	
French Doctors re Social Insurance	299	
Government in practice. A. M. Harvey	105	
Hall of Health.....	205	
Hygienic marriage laws. Effie L. Lobdell	107	
Illinois Tuberculosis Association..	301	
Pneumonia Control. A. C. Baxter	205	
Pneumonia Control Program. A. C. Baxter	105	
Pneumonia typing service.....	306	
Postgraduate obstetrics	501	
Profession's apathy. Fred C. Warnschuis	297	
Scientific Exhibit at Rockford....	205	
Scientific service committee. R. S. Berghoff	498	
State Medical Editors Association.	205	
Ten cardinal principles.....	300	
To practice both law and medicine. F. C. Warnschuis.....	204	
University course	502	
U. S. A. vs. A. M. A. J. R. Ballinger	107	
Women's Auxiliary	207	
Woman's Field Army. Bowman C. Crowall	104	
Cottle, M. H. Paper.....	161	
County Medical Society and Legisla- tive Committee. John R. Neal, Springfield	234	
Cowen, Jack. Discussion.....	119	
Crawford, W. L. Discussion.....	65	
Croft, Jos. D. Paper.....	260	
Cross cylinder in refraction. Philip A. Halper, Chicago.....	115	

D

Davis, J. W. Paper..... 372

Davis, N. S. III. Discussion..... 141

DEATHS:

Abbott, Wilson Ruffin. Chicago.. 284

Bauer, Paul Barnabus. White Hall 188

Berg, Ole Hansen. Chicago..... 479

Bierly, James Roy. Peoria..... 92

Blickhan, Alois J. Quincy..... 92

Bowe, Edward. Jacksonville..... 380

Braunwarth, Anna M. Chicago.... 284

Briggs, Francis Earle, Ludlow, Ill. 567

Brobeck, Alexander Lane. Hoopes-
ton 479

Brigham, Chester Roy, Polo, Ill.... 568

Bryan, John C. Chicago..... 188

Campbell, Peter. M. Elgin..... 479

Carpenter, John Henry. Chicago.. 479

Cates, Edward M. Wayne City.... 380

Cherney, Edward V. Springfield.. 479

Clarke, Ward Greene. Chicago... 92

Copelan, Chester C. Springfield... 92

Courtney, John F., Joliet, Ill..... 568

Duffy, Frank T. Chicago..... 92

Eberhart, Noble Murray, Chicago.. 568

Fair, Fred Ferdinand. Chicago... 479

Faller, Adolph. Chicago..... 380

Fildes, Vernon Sylvester, Olney,
Ill. 568

Fivey, Robert E. Chicago..... 479

Fults, Jacob C., Waterloo, Ill..... 568

Fuson, Alonzo Allen. Summun.... 188

Gilliam, Randolph Moore, Chicago. 568

Gordon, Arthur Horance. Chicago 92

Goodkind, Maurice Louis. Chicago 479

Grim, Ulysses J. Waukegan..... 188

Gundrum, Mark Duane. Westville 479

Harvey, Frank P. Chicago..... 380

Harvey, Edward J. Joliet..... 380

Heinen, Aloys. Chicago..... 92

Herrick, Minerva. Chicago..... 188

Higgins, Edward J. Joliet..... 380

Hotchkiss, William F. Blue Island 188

Houston, William Wilson. Good
Hope 188

Houston, Alfred M., Joliet, Ill.... 568

Howell, William Sullivan. Winne-
bago 380

Hunt, Henry Eben, Roodhouse, Ill. 568

Juchhoff, Edna Zinn. Chicago.... 188

Kariher, Harry Cullen, Champaign,
Ill. 568

Klinctop, Charles W. Chicago.... 380

Kreuser, Theodor Anthony. Hines 479

Lane, Shirley William. Kankakee.. 188

La Rue, Robert E. Erie..... 380

Legier, John Tugaw. Carmi..... 188

Matthei, Philip Carl. Chicago.... 92

McLaughlin, George L., Chicago.. 568

McSparin, John Monroe. Carriers
Mills 479

Mennie, Annie M., Chicago..... 568

Miley, Michael Ritter. Beecher, Ill. 480

Mordoff, Gordon Edgar. Wilmette 480

Morgan, William Edward, Chicago. 568

Norbury, Frank Parsons. Beards-
town 479

Olds, Clifton B. Chicago..... 92

Orr, John Forster, Chicago..... 568

Patrick, Hugh Talbot. New Phila-
delphia, O. 188

Peterson, Joseph Alonzo. Oak Park 284

Petersen, Heinrich F. W., Dundee 480

Pietroski, Joseph Conrad. Cicero.. 380

Poorman, Charles Wallace. Oak
Park 284

Pugh, Charles E. Chicago..... 480

Purcell, Michael Joseph. Chicago.. 480

Quinlan, William Wheelock. Wil-
mette 92

Quitmeyer, John Charles. Chicago 380

Roberts, Ira T. Johnson City.... 92

Reid, David W., Jacksonville, Ill.. 568

Rosenblum, Samuel M. Chicago.. 284

Ross, Ellison Lloyd. Waukegan... 480

Roth, James Henry. Chicago.... 92

Rumpf, John Henry, Chicago.... 480

Sanford, Willard Clark. Chicago.. 480

Scarborough, Claude Murphy. Chi-
cago Heights 480

Schott, Darwin, Champaign, Ill.... 568

Schultz, Henry. Chicago..... 480

Schram, Frank Edward, Chicago.. 568

Schwingel, William Henry. Aurora 92

Shutterly, Eugene E. Evanston... 284

Simon, David Charles. Chicago... 284

Sparrow, Hannah Steele. Chicago.. 92

Staples, Melville Wright. Pleasant
Plains 480

Stewart, James C. Anna..... 380

Steiner, Leo, Chicago..... 568

Thomas, Abraham L. Chicago.... 480

Thurston, Timothy John. Chicago 284

Trader, William Arthur. Quincy.. 380

Vogelei, George Nicholas. Chicago 480

Waskow, Otto G. Chicago..... 284

Wells, Clarence A., Quincy, Ill.... 568

Williams, David Henry, Jr. Chi-
cago 188

Wilson, Abram Ashley. Davis.... 480

Wray, Austin L. Rock Island.... 284

Young, William Mannen, Booming-
ton, Ill. 568

Zeigler, Willis Terry. Canton.... 284

Dementia Praecox Treatment. D.
Louis Steinburg, Gert Heilbrunn,
and Erich Liebert, Elgin..... 405

de Tarnowsky, Geo. Paper..... 269

Dick, Andrew. Paper..... 344

Dilts, P. V. Paper..... 275

Doctors bill, Layman's viewpoint. (E) 4

Doctor and patient relation. (E)... 93, 188

Drucek, Charles J. Paper..... 159

Dysart, B. W. Paper..... 258

E

Early history of N. W. country. (E) 394

Edlin, J. D. Discussion..... 173

Edlin, J. B. Paper..... 562

EDITORIALS:

1939 annual meeting..... 490

A. M. A. Disapproves of health
bill 487

Action against A. M. A..... 3

Business and the Doctor..... 97

Cancer control progress..... 287

California Doctors rap health bill 392

Chiropractic bill 282..... 200

- Coronary thrombosis increasing?.. 189
 Early history of N. W. country.. 394
 Doctor's bill layman's viewpoint.. 4
 Doctor and patient relation....93, 188
 Educate the laity..... 97
 Enslave the profession, politicians
 holiday 285
 Evaluating social security..... 381
 Feeble-mindedness, Clarifying 285
 Happy New Year..... 1
 House of delegates speaks officially 38
 Labor vs. medical organization... 192
 Law journals vs. Dept. of Justice 388
 License requires citizenship..... 8
 Living on ideals..... 481
 Medical profession gives service.. 1
 Medicine and the whirlwind..... 5
 Medicine well defined profession.. 96
 Minnesota's Dean 288
 Mistakes in social security law... 391
 Mortality, Low..... 289
 Osteopathy Bill 293. (E)..... 201
 Pegler praises profession..... 395
 Political medicine 492
 Political selection of Doctors.... 204
 Press comment on A. A. A..... 385
 Preliminary program for 1939.... 211
 Publicity stunt query..... 192
 Public health hills..... 288
 Refugee physicians a problem.... 396
 Socialized medicine re farmers.... 93
 Suggestions on preparing copy.... 294
 Tularemia prevalent 9
 What hypocrisy! 203
 What kind of Doctor?..... 202
 Wisconsin society honors Dr. Beaumont 394
 Educational Committee Report....10, 108
 Educate the laity. (E)..... 97
 Electrocardiogram, Value of. James
 B. Berardi, Dwight..... 136
 Enslave the profession—politicians'
 holiday. (E)..... 285
 Epstein, Casper. Discussion..... 130
 Erythrocyte sedimentation rate. J. B.
 Stokes, Pontiac 236
 Estrogenic therapy of menopausal
 disorders. Philip F. Schneider,
 Evanston 57
 Evaluating social security. (E).... 381
 Evanston Social Hygiene Clinic. Win-
 ston H. Tucker, Robert A. Allen,
 Joseph D. Croft, Noel G. Shaw,
 Evanston 260
 F
 Falk, O. P. J. Paper..... 252
 Falls, Fred H. Discussion..... 61
 Falstein, Eugene I. Paper..... 164
 Fauley, Gordon B. Paper..... 272
 Feeble-mindedness, Clarifying. (E).. 285
 Feet, Weak, Treatment. James Gra-
 ham, Springfield 425
 Finkelman, Isadore. Paper..... 264
 Fishhack, Hamilton R. Paper..... 272
 Forster, R. E. Paper..... 344
 G
 Gallbladder disease improvement.
 Ralph B. Bettman and William H.
 Tannenbaum, Chicago 266
 Galloway, Thomas C. Discussion...56, 183
 Geiger, Clyde J. Paper..... 80
 Gerty, Francis J. Discussion...168, 408
 Goldsmith, A. A. Paper..... 559
 Goldstein, H. H. Paper..... 562
 Gowen, G. Howard. Paper..... 562
 Graham, James. Paper..... 425
 Greeley, Paul W. Paper..... 436
 Greenwood, Glenn J. Paper..... 52
 Grinker, Roy. Paper..... 453
 H
 Haffron, Daniel. Paper..... 264
 Halper, Philip A. Paper..... 115
 Discussion 233
 Happy New Year. (E)..... 1
 Harris, I. T. Paper..... 247
 Heads, Study of. J. W. Davis, Anna 372
 Heilbrunn, Gert. Paper..... 405
 Hellmuth, George A. Paper..... 61
 Hemorrhoids, Internal, Cause. Chas.
 J. Drueck, Chicago..... 159
 Herndon, Richard F. Paper..... 73
 Hirschfelder, Max. Paper..... 368
 Hofrichter, Frank C. Paper..... 542
 Holinger, Paul. Discussion..... 52
 Holt, Helen. Paper..... 458
 House of Delegates speaks officially.
 (E) 381
 Huntington Chorea Problem. Eugene
 I. Falstein and Theo. T. Stone,
 Chicago 164
 Hutton, James H. Discussion..... 68
 Hypertensive heart. O. P. J. Falk,
 St. Louis 252
 Hypothermia in hyperinsulinism. Al-
 fred Paul Bay, Western Springs.. 369
 Hypothyroidism with psychosis. A.
 Simon, Elgin 66
 I
 If war should come. Normal L.
 Sheeche, Rockford 270
 Institutional blood banks. H. G.
 Goldstein, L. Olsman and J. B.
 Edlin, Chicago 562
 Intestinal obstruction re hiliary cal-
 culi. E. L. Strohl and Guy V. Pon-
 tius, Chicago 558
 J
 Jirka, Frank J. Paper..... 549
 Jones, Emil. Paper..... 344
 K
 Keeton, Robert W. Paper..... 510
 Kerwin, R. W. Paper..... 69
 L
 Labor vs. medical organization. (E) 192
 Laryngitis, Acute, in infants. Glenn
 J. Greenwood, Chicago..... 52
 Lawler, Edmund G. Paper..... 61
 Law journals vs. Department of Jus-
 tice. (E)..... 388
 Lazar, N. K. Paper..... 141
 LeBlanc, F. Paper..... 254
 Leland, R. G. Discussion..... 414
 License requires citizenship. (E)... 8
 Liebert, Erich. Paper..... 405

Limarzi, Louis R. Paper.....	38
Lipocalcinogranulomatosis. Emil Jones, Andrew Dick, and R. E. Forster, Chicago	344
Living on ideals. (E).....	481
Low, Abraham A. Paper.....	169
Looking backward 99 years. (E)....	481

M

1939 annual meeting (E).....	490
Malaria, 100 cases. P. V. Diltz, Pittsfield	275
Malignancies of colon and rectum. Lorin D. Whittaker, Peoria.....	83
Meyer, Samuel E. Paper.....	496
Milk of low curd tension. Maurice L. Blatt, Chicago	514
Milligan, J. Donald. Paper.....	551

MARRIAGES:

Baker, Clark F. Marion.....	89
Blome, Willard N. Oak Park....	376
Carter, Kenneth L. St. Louis....	476
Christopher, Frederick, Evanston, Ill.	565
Dexheimer, Herbert Paul. O'Fallon	89
Digate, Jacob Salvatore, Chicago..	565
Errico, Silvio, Moline, Ill.....	565
Fahey, Patrick Joseph. Des Plaines	185
Forrester, Claude R. G. Chicago..	476
Foulke, Lawrence Edward. Wash- ington	185
Gillespie, James B. Urbana.....	476
Hancur, Gerald A. Cicero.....	281
Haselton, Frederick Russell, Great Lakes, Ill.	565
Heaton, John Richard. Hoopston	90
Howard, Henry Sargent. Peoria...	90
Kunsch, Ladislaus John. Naperville	281
O'Neill, Clement P., Rock Island, Ill.	565
Ormsby, Oliver S. Chicago.....	281
Saltiel, Thomas Paine. Chicago....	90
Sheets, Raymond F. Carthage....	476
Shronts, John F. Woodstock....	281
Siegert, Frederick W. Pana.....	281
Yazarian, Arshak Y. Washburn..	476
Waller, James B., Decatur, Ill....	565
Marrow aspirations, Value of. Louis R. Limarzi, Chicago.....	38

Martin, Collier F. Paper.....	337
Mass, Max. Paper.....	120
McGee, Andrew J. Paper.....	470
McShane, John J. Discussion.....	148
Medical care for all people. R. K. Packard, Chicago	410

MEDICAL ECONOMICS:

Doctor looks at socialized medicine. Ernest L. Shore.....	100
E. S. Hamilton....	100, 196, 296, 397
Being pushed around. H. L. Men- cken	495
Hospitalization Plan for Low In- comes. Major C. Seelig.....	197
Medical profession gives service. (E)	1
Medical profession in war. Leonard Appelquist, Aurora	272
Medicine and the whirlwind. (E)...	5
Medicine well defined profession. (E)	96
Merrifield, F. W. Discussion.....	129
Miller, S. M. Discussion.....	152, 264
Menopause re painful shoulder. Wal- ter W. Voight, Chicago.....	340
Minnesota's dean. (E).....	288
Mistakes in social security law. (E)	391
Mortality, Low. (E).....	289
Mumps and acute meningoencepha- litis. Hamilton R. Fishback and Gordon B. Fauley, Chicago.....	273
Munson, Samuel E. Paper.....	505
Myopia progressive. W. Moore Thomp- son and Oscar D. Nugent, Chicago	231
Muskat, Irving. Paper.....	153

N

Nasal septum surgery in children. M. H. Cottle, Chicago.....	161
Neal, John R. Paper.....	15, 234
Necrobiosis lipoidica diabetorum. Herbert Rattner, Chicago.....	359
Needham, F. S. Discussion.....	179
Negro physicians co-operate.....	111
Neisserian re bouillon filtrate. Bud C. Corbus and Bud C. Corbus, Jr., Chicago	19
Nerve disturbance re arteriosclerosis. Roy Grinker and Joseph Reich, Chicago	453
Nerve physiology re clinical medicine. Emmett F. Pearson, Springfield...	227

New Deal in medicine. Logan Glen- dening, Kansas City, Mo.....	416
Norbury, Frank Garm. Paper.....	422
Discussion	79
Nugent, Oscar D. Paper.....	231
Nugent, O. B. Discussion.....	119

O

Olin, Harry, Chicago. Paper.....	517
Olsmann, L. Paper.....	562
Ophthalmology, Progress in. Samuel E. Meyer, Chicago.....	514
Osteodystrophy. Harry Olin, Chicago	517
Osteomyelitis re fusospirochetal in- fection. T. Benedek, S. J. Zakon and I. T. Harris, Chicago.....	347
Osteopathy Bill 293. (E).....	201
Otrich, G. C. Paper.....	351
Otitis media, Chronic — results. George E. Shambaugh, Jr., Chicago	180

P

Packard, R. K. Paper.....	410
Parker, George. Discussion.....	140
Patient and the weather. F. Le- Blanc. Chicago	254
Peacock, Silber. Paper.....	46
Pearson, Emmett F. Paper.....	227
Pediatric treatment of otologic sepsis. Philip L. Aries, Chicago.....	131
Pegler praises profession service. (E)	395
Peritonitis, Chronic fibroplastic. Thom Bondus, Chicago	442
Pettit, R. T. Paper.....	413
Pharmaceutical Association re social- ized medicine	401
Physiological viewpoint in Medicine. Robert W. Keeton, Chicago.....	510
Pieratol re chronic otitis. V. R. Van- Stane, Chicago	442
Picturesque Rockford	312
Political Selection of Doctors. (E)...	204
Political medicine and public health. (E)	492
Pontius, Guy V. Paper.....	558
Progress of organized medicine. Samuel E. Munson, Springfield....	505
Portis, Bernard. Discussion.....	87
Poser, Edouard. Paper.....	280

- Post-graduate medical education.
Frank Garm Norbury, Jacksonville 422
- Post-graduate courses in obstetrics.. 402
- Preliminary program for 1939. (E). 211
- Preoperative and post-operative treatment. Guy S. Van Alstyne, Chicago 243
- Press comment on A. M. A. (E).. 385
- Prilla, Eysay. Paper..... 277
- Proctoscopic examinations. Everett B. Williams, Chicago..... 374
- Professional expense reductions. (E) 194
- Program 99th Annual Meeting..... 313
- Prontosil in pyopneumonia. Lawrence Schlenker, St. Louis, Mo..... 555
- Psychoses in children. Irene C. Sherman, Chicago 446
- Psychoses treatment. Beulah Bosselman, Chicago 355
- Psychonuroses. Meyer Brown, Chicago 361
- Public health hills. (E)..... 288
- Publicity stunt query. (E)..... 192
- R
- Rahhit fever increases..... 402
- Radium re diseases of the skin. Frank E. Simpson, J. Ernest Breed and James S. Thompson, Chicago..... 521
- Radiology aids in diagnosis of heart disease. Edmund G. Lawler and Geo. A. Hellmuth, Chicago..... 61
- Rattner, Herbert. Paper..... 359
- Refugee physicians a problem. (E). 396
- Reich, Joseph. Paper..... 453
- Reserve, Standpoint of. Geo. de Tarnowski, Chicago 269
- Reuther, Cleo F. Paper..... 337
- Roberts, W. R. and E. L. Paper.. 247
- Rocky Mountain Spotted Fever in Illinois. B. Q. Dysart, Henry.... 258
- Rosenow, Edward C. Paper..... 28
- S
- 2000 Peptic ulcer cases. J. Donald Milligan, Chicago 551
- Saxon, Leo. Paper..... 252
- Scarlet fever control re streptococcus culture. Martin H. Seifert, Wilmette 174
- Scarlet fever survey. Silber Peacock, John A. Bigler, Highland Park, and Marie Werner, Chicago..... 46
- Schipper, Irving S. Paper..... 457
- Schlenker, Lawrence. Paper..... 555
- Schmitz, Herbert E. Paper..... 80
- Schneider, Philip F. Paper..... 57
- Schultz, Louis W. Paper..... 127
- Seed, Linden. Discussion..... 72
- Seifert, Martin H. Paper..... 174
- Selinger, Elias. Discussion..... 145
- Shambaugh, George E. Paper..... 180
- Shambaugh, George S., Jr. Discussion 158
- Shaw, Noel G. Paper..... 260
- Sheeche, Norman L. Paper..... 270
- Sherman, Irene C. Paper..... 446
- Shock treatment of functional psychoses. Abraham A. Low, Chicago 169
- Simon, A. Paper..... 66
- Simpson, Frank E. Paper..... 521
- Sinusitis re operation. Irving Muskat, Chicago 153
- Skin grafts and application. Paul W. Greeley, Chicago 436
- Smith, G. B. Discussion..... 230
- Socialized medicine re farmers. (E) 93
- Sonenschein, Benj. Paper..... 450
- Steinburg, D. Louis. Paper..... 405
- Stoll, John E. Paper..... 252
- Spellberg, M. S. Paper..... 366
- Stahmann, Fred S. Discussion..... 60
- Steigmann, Frederick. Paper..... 120
- Stokes, J. B. Paper..... 236
- Stone, Theo. T. Paper..... 164
- Streptococci re various diseases. Edward C. Rosenow, Rochester, Minn. 28
- Stricture, Rectal. Collier F. Martin, Philadelphia, and Theo. F. Reuther, Chicago 337
- Strohl, E. Lee. Paper..... 558
- Stude, Wm. Carl. Paper..... 463
- Suharachnoid hemorrhage. Richard F. Herndon, Springfield..... 73
- Suggestions on preparing copy. (E) 294
- Sulfanilamide re pertonsillar abscess. Benj. Sonenschein, Martinsville... 450
- Sulfanilamide, Toxicity of. M. S. Spellberg 366
- Suppository medication. Leslie E. Bovik, Waukegan 419
- Syphilis control program of Illinois Department of Public Health. Noxon Toomey, Springfield..... 148
- T
- Tannenbaum, Wm. H. Paper..... 266
- Taylor, G. G. Paper..... 146
- Thompson, James S. Paper..... 521
- Thompson, W. Moore. Paper..... 231
- Toomey, Noxon. Paper..... 148
- Trachoma in Southern Illinois clinics. Max Hirschfelder, Harrisburg.... 368
- Tuberculosis of cervix uteri. Herbert E. Schmitz and Clyde J. Geiger, Chicago 80
- Tucker, Winston H. Discussion.... 152
- Paper 260
- Tularemia prevalent. (E)..... 9
- U
- Undulant fever. W. R. Roberts and E. L. Roberts, Cissna Park..... 247
- V
- Van Alstyne, Guy S. Paper..... 243
- Vanstane, V. R. Paper..... 442
- Venereal disease. J. Howard Beard, Urbana 122
- Venereal disease control. G. G. Taylor, Chicago 146
- Venereal disease program. G. Howard Gowen, Chicago 542
- Vitamins in ophthalmology. Helen Holt, Chicago 458
- Vitamin B1 in polyneuritis. Andrew J. McGee, Dwight..... 470
- Vitamin B1 re visual reception. Edourd Poser, Chicago..... 280
- Voight, Walter W. Paper..... 340
- Vomiting in children. Eysay Prilla, Chicago 277
- W
- Weiss, J. Allen. Discussion..... 157
- Werner, Marie. Paper..... 46
- What hypocrisy! (E)..... 203

What kind of Doctor? (E).....	202	Winnabago County Medical Society	103	Woman's Auxiliary	398
Whittaker, Lorin D. Paper.....	83	Wisconsin Society honors Dr. Beau-		Woodruff, George. Discussion.....	135
Williams, Everett B. Paper.....	374	mont. (E).....	394	Zakon, S. J. Paper.	247

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CONTENTS:

Editorials (For Titles See Extended Table of Contents)

1

ORIGINAL ARTICLES

- Compulsory Health Insurance Appraisal. *J. R. Neal, M. D., Springfield, Ill.*..... 15
- Serological Control of Neisserian Infections re Bouillon Filtrate. *Budd C. Corbus, M. D. and Budd C. Corbus, Jr., M. D., Chicago.*..... 19
- Studies re Streptococci and Various Diseases. *Edward C. Roscnore, M. D., Rochester, Minn.*.... 28
- Diagnostic Value of Sternal Marrow Aspirations. *Louis R. Limarzi, M. D., Chicago.*..... 38

(Continued on page 28)

- Scarlet Fever Survey. *Silver Peacock, M. D.; John A. Bigler, M. D., Highland Park, Ill., and Marie Werner, S. B., Chicago.*..... 46
- Acute Laryngitis in Infants. *Glenn J. Greenwood, M. D., Chicago.*..... 52
- Estrogenic Therapy of Menopausal Disorders. *Philip F. Schneider, M. D., Evanston, Ill.*.... 57
- Radiologic Aids re Heart Disease in Children. *Edmund G. Lawler, M. D., and George A. Hellmuth, M. D., Chicago.*..... 61
- Myxedematous Hypothyroidism and Psychosis. *A. Simon, M. D., Elgin, Ill.*..... 66
- Cervical Fasciae and Infections About the Neck. *R. W. Kerwin, M. D., Chicago.*..... 69

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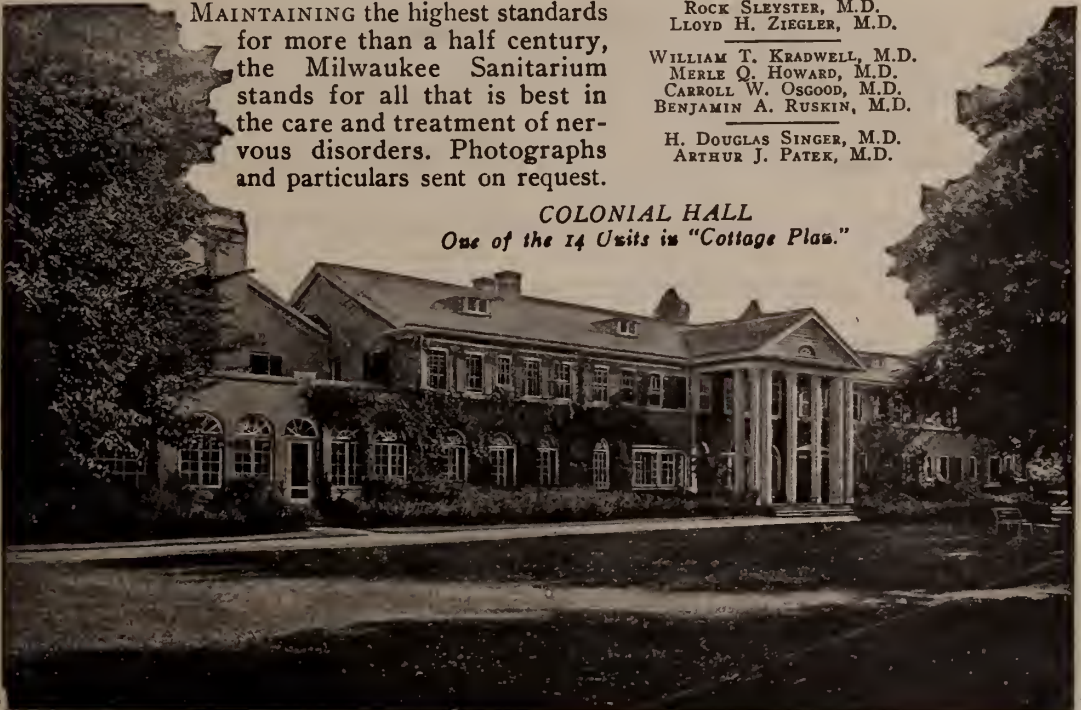
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RECENT ADVANCES IN THE SCIENCE OF NUTRITION

V. Factors Affecting the Vitamin C Contents of Foods

● Recent development of the chemical method for estimation of ascorbic acid (1) has permitted more thorough study of factors determining the vitamin C contents of foods. Circumspectly used, the 2, 6 dichlorophenol-indophenol or "indicator" titration method for vitamin C determination has proven an invaluable tool in this phase of research.

It is now apparent that the vitamin C content of food at the time of consumption is conditioned, first, by the initial ascorbic acid content of the food at the time of harvesting, and second, by the treatment to which the food is subjected between the time of harvesting and the time of consumption.

The initial vitamin C level in raw foods has been found to depend on factors such as variety, maturity and growing conditions (2). Under usual conditions of food crop production, such factors are only partially subject to human control. However, the factors influencing vitamin C in foods from harvesting until consumption are capable of closer regulation by man.

For example, it is known that long storage at improper temperatures adversely affects the initial ascorbic acid contents of foods. Even at refrigeration temperatures raw foods may lose substantial amounts of vitamin C during storage. Rough handling—which causes rupture of vegetable tissue—is also conducive to vitamin C loss especially when followed by improper storage. Certain metals will catalyze vitamin C destruction and even commonly used home-

cooking methods are attended by losses of this essential dietary factor (2).

Briefly, preservation of vitamin C in foods between harvesting and consumption is essentially a problem of preventing or reducing oxidation, either enzymatic or atmospheric. In addition, physical or solution losses must be minimized in preparation of the food for the table. It is pertinent to note that modern commercial canning procedures are well adapted to control both these chemical and physical losses of vitamin C (3).

The use of prime raw stock and quick transport to the cannery after harvesting; rapid inactivation of enzymes through heat treatment; and large scale automatic operations with minimal exposure to air, are basic practices common to all modern canning procedures. All serve to check oxidative losses of the initial ascorbic acid present in raw foods. In addition, during canning, the foods are cooked by the heat process while contained in the sealed can. The liquid within the can, therefore, retains vitamin C which has been removed from the food by solution.

Researches have shown that many commercially canned foods are to be listed among the most valuable contributors of vitamin C to the diet of the American people (2, 3, 4). Such findings demonstrate the effectiveness of modern commercial canning procedures in preservation to the highest practical degree of the initial vitamin C contents of foods.

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(1) 1932. Ztschr. f. Untersuch. d. Lebensmitt. 63, 1.

1933. J. Biol. Chem. 103, 687.

(2) 1938. J. Amer. Med. Assn. 111, 1290.

(3) 1932. Ind. Eng. Chem. 24, 650.

(4) 1938. J. Amer. Med. Assn. 110, 650.

1937. Bull. 19-L Nat'l. Canners Assn., Washington, D. C., 4th Ed.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the forty-fourth in a series, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.



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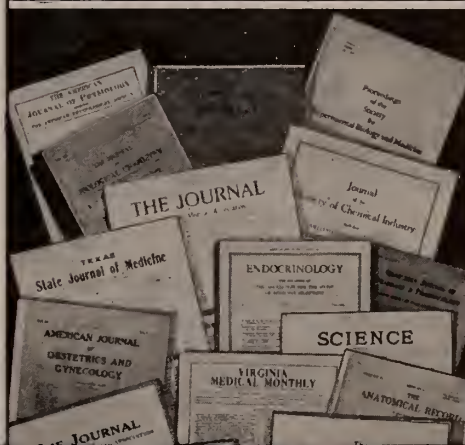
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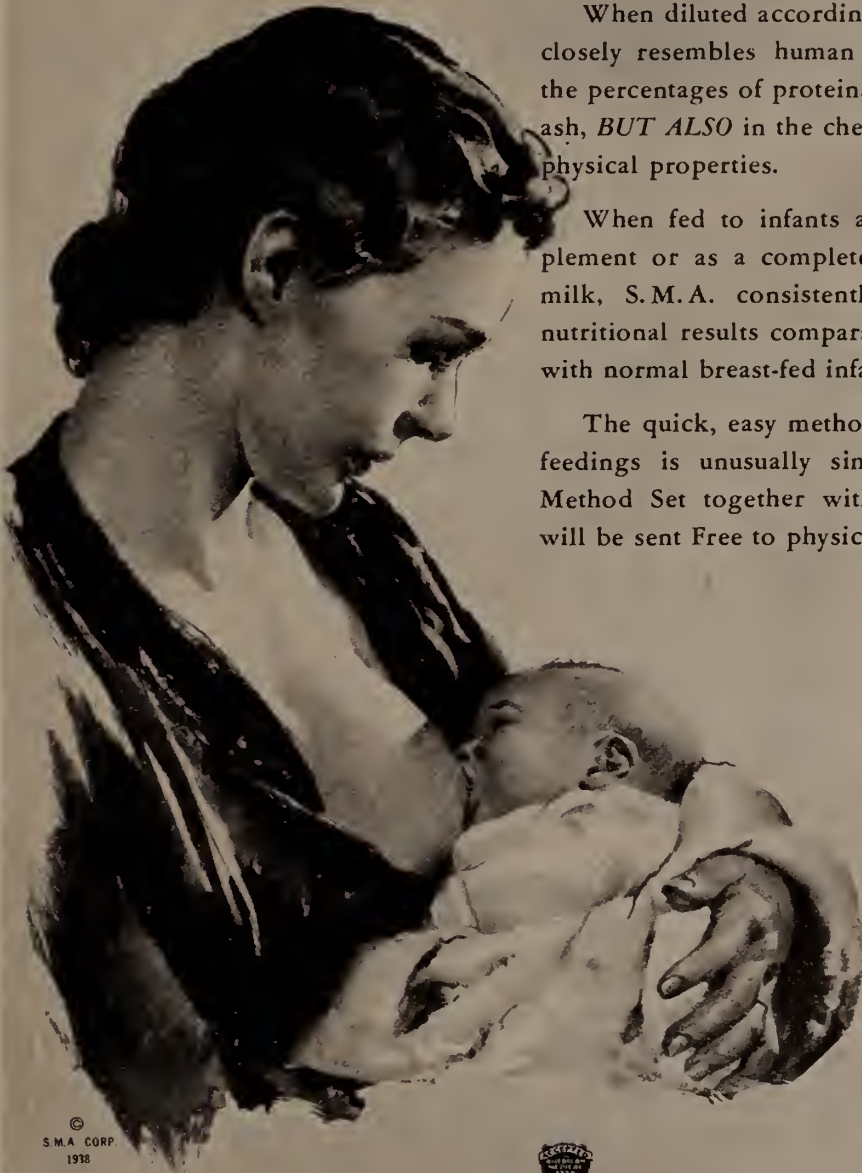
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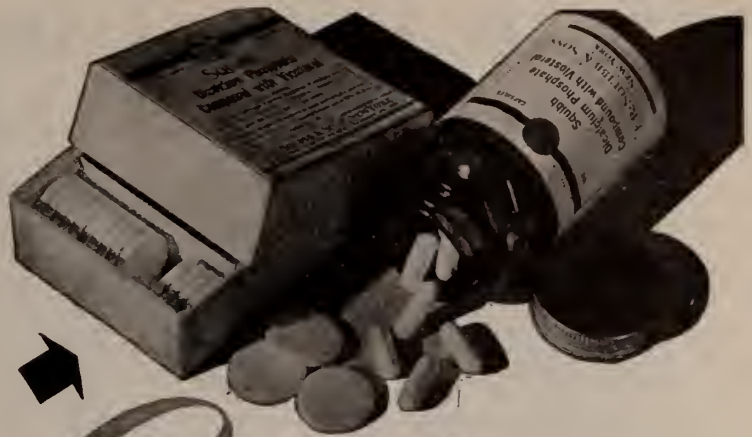
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¹ *Jl. A. M. A.* 100:1002, (April 1), 1933.

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Uncomplicated gastric ulcer first demonstrated by Roentgen rays in 1934. Diet and alkalis afforded little relief. Accompanied by loss of weight. Repeated X-ray studies in 1936 and 1937 showed no improvement. She was placed on a diet-gelatin regime in November, 1937. Relief immediate. Gained weight. Roentgen studies in April, 1938 showed no demonstrable ulcer.

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*Windwer and Matzner, *Am. Jl. Dig. Dis.*

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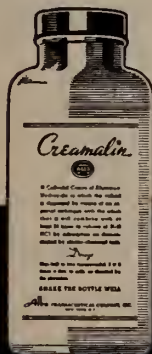
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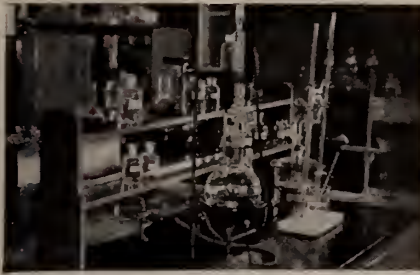
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Stop the febrile drain on vital body tissues with supportive dietary treatment. The increased metabolism of febrile states must be balanced by increased calorie and protein intake in an easily digested, low residue diet.

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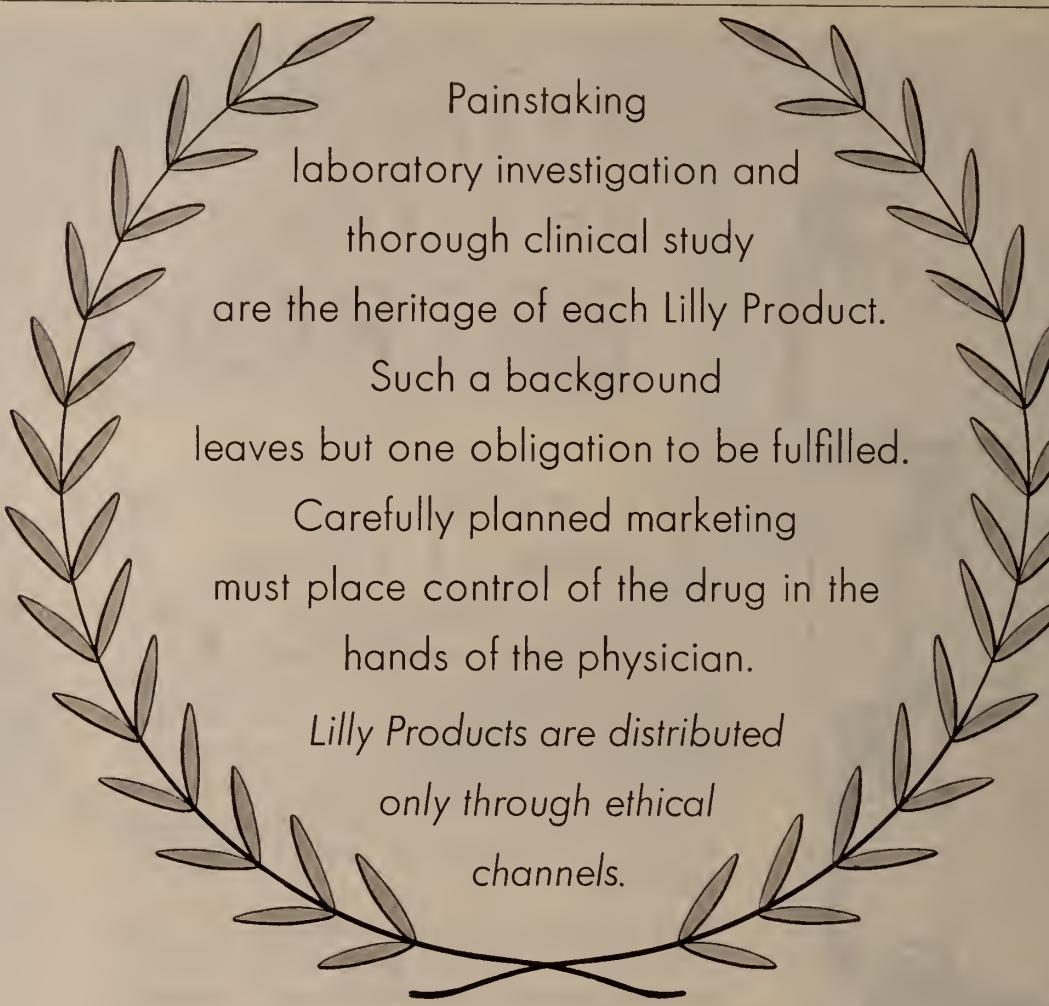
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ILLINOIS MEDICAL JOURNAL

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VOL. 75

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Editorials

THE MEDICAL PROFESSION WILL CONTINUE TO GIVE THE BEST POSSIBLE MEDICAL SERVICE

In these times of uncertainty, when worlds are being made, unmade and remade with abandon, when the world is being worried by every form of vexations, and physicians are beset by the difficulties of economic change, when hazards of every kind surround the physician on every side, the medical profession re-affirms its faith in the future of medicine, its technical excellence, its high ethical standards, and stands ready to meet every up-to-date need of twentieth century civilization.

HAPPY NEW YEAR, 1939!

The medical profession in the United States starts off the new year with the 1939 model of the famous wooden horse that kicked over the town of ancient Troy, not *at* the gates, but actually *within* them.

We *may* have a new Parnassus established down on the banks of the Potomac, and a fresh set of Olympians dripping with human follies, but it is well for us to remember that neither Zeus, nor Hera, nor the goddess of wisdom, herself, the great Pallas Athene, interfered to save the walls of Ilium, when the horse, with its stomach filled with enemy warriors was once *within the fortifications*.

For three decades now, the editor of this magazine, and those whose ideas have been analogous to his, have preached against the wooden horse. We have all preached so strenuously, that in the minds of many of our brothers, the bogey that we talked of, tax supported medical practice, or "Public Health Insurance," became only our personal hobby-horse. Too many of the doctors let us talk on—without listening to us—as to what would happen to scientific medicine if the sneered-at, the mocked and so-called "hobby-horse" ever got on the inside track of the medical profession and took to rocking and careening.

And now that this situation has come to pass, every honest doctor in the United States, whether he admits it openly or not, is realizing that great matters stand all askew.

Tax supported medical practice to the average layman is as tempting a morsel as was the strategic wooden horse that accomplished the fall of Troy or Ilium. It is the cat's paw with which the communistic foes of America and American democracy plan to pull the chestnuts out of the fire. But that the layman does not know.

Quoting from Bullfinch's "Age of Fable" in his abridged tale of great Homer's Iliad we read in part:

"But Troy still held out, and the Greeks began to ever despair of subduing it by force, and by advice of Ulysses resolved to resort to stratagem. They pretended to be making preparations to abandon the siege, and so a portion of the ships were withdrawn and lay hid behind a neighboring island. The Greeks then constructed an immense *wooden horse*, which they gave out was intended as a propitiatory offering to Minerva, but in fact was filled with armed men. The remaining Greeks then betook themselves to their ships and sailed away, as if for a final departure. The Trojans, seeing the encampment broken up and the fleet gone, concluded the enemy to have abandoned the siege. The gates were thrown open, and the whole population issued forth, rejoicing at the long-prohibited liberty of passing freely over the scene of the late encampment. The great *horse* was the chief object of curiosity. All wondered what it could be for. Some recommended to take it into the city as a trophy; *others felt afraid of it.*"

Yes, "*others felt afraid of it.*" That is what discerning medical men have felt about tax supported medical practice. The sixth sense that helps the skilled physician to accurate diagnosis of physical or mental conditions has made such physicians timorous in the face of the "wooden horse" of communism. But getting back to Bullfinch:

"While they hesitate, Laocoon, the priest of Neptune, exclaims:

"What madness, citizens, is this? Have you not learned enough of Grecian fraud to be on your guard against it? For my part, I *fear the Greeks, even when they offer gifts.*' So

saying he threw his lance at the horse's side. It struck, and a hollow sound reverberated like a groan. Then perhaps the people might have taken his advice and destroyed the fatal horse and all its contents; but just at that moment a group of people appeared, dragging forward one who seemed a prisoner, and a Greek. The chiefs reassured him, promised the man that his life would be spared if he told them the truth. He said he was a Greek, by name, Sinon, who had been left behind, and that the horse was a propitiatory offering to Minerva and made so huge for the express purpose of preventing its being carried into the city, for Calchas, the prophet, had told them that if the Trojans took possession of it that they would assuredly triumph over the Greeks. These words turned the tide of the people's feelings and they began to think how they might best secure the monstrous horse and the favorable auguries connected with it, when suddenly a prodigy appeared which left no room for doubt. Two immense serpents came over the sea . . . they attacked the dissenting Laocoon and his two sons and strangled them in their poisonous folds. . . . This event was regarded as a clear indication of the displeasure of the gods at Laocoon's irreverent treatment of the wooden horse which the people no longer hesitated to regard as a sacred object and prepared to introduce with due solemnity into the city which was done with songs and triumphal acclamations, and the day closed with festivity. In the night the armed men who were enclosed in the body of the horse were let out by the traitor Sinon, and they opened the gates to their friends who had returned under cover of the night. The city of Troy was set on fire; the citizens, overcome with feasting and sleep, put to the sword and Troy completely subdued."

The analogy is sufficiently plain. No explanations are needed. We have in the presence of the communistic wooden horse fifty Sinons to every Laocoon and the Sinons prevail.

The wooden horse is within our gates. That is true. But there is still time to save ourselves. If the warriors had been kept enclosed within the animal and the counsels of Laocoon had prevailed "tall Troy's towers" might yet endure.

The lesson is poignant. One paw of the horse sits now in the District of Columbia, and there

is yet another in the Dakotas that are not vital ballasts in the nation's ballot, and a third in the State of California, that is. Quoting Swift:

"Laocoon struck the outside with a spear,
And each imprisoned champion quaked with
fear."

Let every honest physician in the land ally himself with the principles of Laocoon. Strike with the spear of intelligent education of the laity, and with the force of the ballot allied to organized medicine for the sake of science and humanity.

Then indeed will 1939 be a "Happy New Year" because a year triumphant for principle and right and adherence to the Hippocratic Oath. The hour is long past when any self-respecting physician dare, like the homebound Greeks leaving Troy, even so much as nibble at the lotus food of undue optimism and forgetful of this national and scientific and humanitarian crisis follow the course of the lotus eaters who found—

"How sweet it were, hearing the downward
stream
With half-shut eyes ever to seem
Falling asleep in a half dream . . .
Eating the Lotus, day by day!"

ACTION AGAINST THE A. M. A. OPENS VAST FIELD OF MENACING POSSIBILITIES

Heresy trials of the Middle Ages come to mind in the latest attack on organized, scientific medicine that brought to the hearts of the New Dealers that gratification that it seems can be supplied them only through newspaper headlines. At least a capacity for sensationalism and its begetting must be ceded them. For the A. M. A. seems to be on trial!

History holds no recorded annals of the persecution of "medicine men" who ably performed their jobs. It is interesting to note that the American Medical Association is not on trial for inefficiency, nor negligence, nor for lack of progression.

Then *why* is medicine on trial instead of the cobbler, or the tailor?

From the looks of things medicine is on trial and under indictment because it is not allied with boosting the communistic groups bent and determined upon undermining the entire struc-

ture of the United States and putting it in the same condition as that decadent Europe from whose ruined splendor these ideas of destruction are imbibed. The New Deal is going to socialize medicine because the New Deal is socialism riding in a gold-plated wagon as socialism has never ridden before. Quite aside from medical care and other social aspects the Government's indictment against the American Medical Association and several individuals is of direct importance to trade unionists, professional men, and serves businesses general.

In the case of the doctor, it should be realized he has nothing to sell but his services. He may leave medicines with the patient or order a prescription filled at the nearest drug store, but this bit of merchandising, is purely incidental to his visit. His real mission is to use such skill and knowledge as he may possess to make a sick patient well.

In spite of this interpretation, namely, that the doctor gives services and not merchandise the Department of Justice indicts the American Medical Association and several individuals and affiliates as a monopoly of services.

Therefore, in proceeding against the A.M.A. as a monopoly of services, the Department of Justice has opened a vast new field of anti-trust activity that is tremendous in its scope. Immediately certain parallel possibilities suggest themselves.

If the federal indictment of action against a purely service organization be followed by convictions, are the dentists, nurses, pharmacists, barbers, grocers, milk dealers, dry cleaners, newspaper service deliveries and other service trades as immune from price fixing prosecutions as we have heretofore been led to believe.

If hospitals can be prosecuted for refusing to accept patients of a cut-rate "nonunion" medical clinic, can the plumbers, carpenters, fixture hangers or similar unions be punished for refusal of their services in installing nonunion materials on a building job?

Or if social aspects justify the intervention of the government in behalf of low-priced medical care for the masses, can the same argument be used to crack down on net of make-work rules that help to keep building costs high?

The hospital, likewise, is primarily a service organization. The patient within its walls buys no merchandise; he pays his money for labora-

tory tests, operating facilities, and such nursing and other care as is necessary to make him a physically fit member of society again. If he dies, his estate is presented with a bill on a basis of services rendered rather than for merchandise purchased.

If the A.M.A. can be convicted as supporting a monopoly of services the situation becomes of tremendous importance also to all professions.

Are the banking groups immune from federal or state action if they prescribe or urge uniform service fees for small accounts or other bank activities?

Can the American Bar Association or a state bar association lawfully suggest schedules of fees to be charged by their members?

Can any professional organization, be it composed of lawyers, doctors, dentists or real estate operators, engage in promotional activities that may lead to monopoly in any particular field?

Finally, the government case against the American Medical Association affiliates and individuals has been taken out of the controversial stage and reduced to cold legal phraseology of indictments; there will be an appeal to the lower court for decisions and to the United States Supreme Court for a final ruling.

In a radio talk on August 15, 1938, President Roosevelt said: "A national health conference was held at my suggestion to consider ways and means of extending to the people of this country more adequate health and medical services."

Health laws and plans are to be introduced in this Congress.

As a part of the propaganda carried on ever since the Committee on the Costs of Medical Care published its subsidized report in 1932, a carefully supervised and adroitly planned campaign has emanated from Washington aimed at the socialization of medicine.

A committee in Washington is urging the spending of \$850,000,000 a year for ten years in a program of Government public health activities. If the profession can help control the spending of this sum, a great deal of it will be properly used and if the doctors will stick together, their voice cannot be ignored.

But the question is now, Will the doctors organize themselves and stick by their organizations one hundred per cent? In union there is strength.

THE DOCTOR'S BILL, THE VIEW-POINT OF A LAYMAN

Indictment of the American Medical Association by government authorities reminded us of the ancient custom of whipping the sea with the classic edition of a ranchero's or mule-driver's black snake.

Apt comment on this government "bull" finds the apotheosis of excellent perspective in the editorial appearing in the *Chicago Daily Tribune* under date of December 31, 1939, reproduced herewith by special permission:

THE DOCTOR'S BILL

"The indictment of the American Medical Association and some of its directing officials was not a courageous act in the sense that the administration is likely to lose great numbers of votes as a result of its action. The probabilities, unfortunately, are all the other way.

"The doctor is welcome when there is illness in the family but the memory of his bill often outlasts gratitude for his services. Circumstances makes it easy to think of the doctor as a profiteer on misfortune. When everybody else sends flowers the doctor sends a bill. All too frequently it arrives when the family is hard pressed because of loss of income resulting from the illness itself and because drugs, nursing, hospital care, and special diets have imposed unexpected burdens upon the family budget.

"Illness itself inspires in the victim and his family a sense of injustice. He didn't ask for an inflamed appendix or an invasion of pneumonia germs. It was his hard luck to fall victim and it seems to add to the injustice to make him pay in money as well as in suffering. Worse still, the more serious the disease and the greater the suffering the heavier the bills are likely to be.

"Accordingly, many citizens would welcome state medicine or socialized medicine. The medical association has resisted that trend with all the vigor at its command. The doctors believe that if they had to look to government for their support the quality of medical service and the competence of the profession would decline rapidly. There is much evidence to support this view and little to refute it. Any one who had contact with the medical corps in the war knows how wide was the gulf which separated the regular army doctors from the physicians who en-

listed from private practice. There were exceptions on both sides, but it was clear that the standards of professional competence as of professional conscience were far higher among the volunteers than among the regulars. It was no accident that Jimmy Roosevelt in his recent illness preferred the Mayo clinic to the government hospitals to which he could have been admitted at small cost either as a high-ranking civil employe of the government or as an officer of marines.

"The doctors may be wrong in seeing a trend toward state medicine in a number of recent innovations in medical economies but it would be astonishing, indeed, if the profession were not in a suspicious frame of mind. The present administration in Washington is eager for new fields of activity to dominate. It has given numerous evidences of its desire to include medical service within its grand scheme of social security. If that happens, the relations of doctor and patient will be radically altered and the overwhelming probability is that the change will be to the disadvantage of both.

"Whatever the faults of the present organization of medicine may be, the fact is that disease and death rates have dropped to the lowest point in the history of this country. Medical science has made phenomenal progress, thanks in no small part to the activity of the medical association in forcing higher standards upon medical schools and hospitals, and in publishing scientific journals. It may well be true, as is often said, that the medical requirements of the family of moderate means (in contrast to the poor and the prosperous) are not fully met by present arrangements but the case has been greatly exaggerated. Families of moderate means constitute the largest single element in the population and if their needs were not being met pretty satisfactorily the death and disease rates would be rising, not falling.

"The doctors have recently proposed a plan which deserves sympathetic study. They suggest that the risk of illness among persons of small income be covered by insurance with an annual premium which would not place an undue strain on the ordinary family's budget and would cover ordinary risks. The person (or family) so insured would receive, in case of illness, a cash payment sufficient to meet the reasonable costs of treating the disease contracted.

The patient would still be free to choose his own doctor. It is thought that the obvious weakness in such a plan, the likelihood that some patients would take advantage of it to malingering and others would be encouraged in malingering by unscrupulous physicians, could be overcome by giving supervision of the plan to the medical societies. The proposal is intended to cover the cost of medical services much as the Plan for Hospital Care covers hospital charges.

"Obviously the adoption of such a plan would not solve the last budgetary difficulty created by disease, nor would the plan revolutionize medical practice. Those who believe in state medicine will, therefore, reject the proposal out of hand. Others who have the wit to see that under present arrangements miraculous advances have been made in medical science and in distributing the benefits widely will hope that under this plan or some other the unavoidable costs of illness can be made less burdensome to the patient without at the same time destroying the professional pride and ambition of the physician.

"In spite of the fact that its material rewards are not great, medicine today attracts and holds superior young men and women; it would not do so if they felt that their future depended on governmental favor rather than upon professional attainments. Experience teaches that there is far more reason to place confidence in the high purposes and altruism of the doctors than in the tall talk of politicians or the wishful thinking of professional reformers."

MEDICINE CANNOT ESCAPE BEING DRAWN UP BY THE WHIRLWIND

Merle Thorpe in *Nation's Business* for December, 1938, under the title "For 1939—No Red Herrings," says:

"Comes now the New Year with its traditional sound effects. Many high and noble resolutions to turn over a new leaf will be the order of the day.

"Our resolve is to continue the thankless role of 'His Majesty's Loyal Opposition,' and, as such, to wish for the nation fewer political red herrings across the trail in 1939.

"Nine long years have rolled by and commissions, surveys, investigations continue solemnly and pedantically to take our business mechanism apart for microscopic study of each wheel, bar,

escapement. Each part is publicly indicted for its failure to provide jobs, production, security.

"These monotonous charges are red herrings to distract the public's attention from the real defendant. Private enterprise has been supplanted these nine years by National Planning and Management. Political management should be in the witness box under cross-examination. It should also be at the bar as defendant.

"Political Planning in the driver's seat has distributed the nation's savings—not private enterprise. Politics has allocated billions of formerly free capital to its purposes, and also 20 billions of the credit stored up in pre-planning days. When such learned savants as Lubin and Henderson and Jerome Frank plaintively deplore the lack of capital investment, they should face the real culprit, the political control and operation of 24 federal lending boards.

"For ten years politics has 'planned' extensively and intensively for agriculture with two billions of dollars and unlimited power. Our investigating commissions would find wheat today at the lowest price in terms of gold in 300 years, world markets disrupted, government granaries bulging, and should, in an honest search for truth, cross-examine the administrators of National Planning in the farm field.

"Likewise, since the job of labor relations has been taken from private management and lodged with federal administrators, they, not private enterprise, should be put on the grill. Why, they should be asked, are such relations—once the envy of foreign competitors—today torn and hate-engendered, a class-consciousness hitherto unknown, the one-time production through the joy of breaking records faltering and uncertain?

"In sum, those responsible for planning the free markets of grain and securities, housing construction, in producing kilowatts and expansions of the service, supervision of coal, oil, and rails, to mention only a few of the myriad new controls, should bear the burden of proof for failure to make good on promises. To arraign private enterprise again is a herring of deepest red.

"Patriotism calls upon statesmen to stand up and answer, to be the first to admit mistakes! What have the sponsors of the new controls to say about the failure of their promises? What have we after nearly ten years of political planning in the business field? Unemployment still

in eight figures. Industrial activity at the level of 1917. A 'relief' class, to be permanent, confesses Mr. Hopkins. A liberalism, once vigilant against political control over individual lives, now perverted to mask a campaign for greater political power. A class-consciousness of the Old World pattern. Yardsticks discredited. The nation's savings expropriated and dissipated. Youth, admonished by the Youth Administrator 'to hold the social and economic gains.' What gains? A corroding self-help, a dependence upon the national till, which, in reality, is spending youth's own future earnings. Thrift a mockery. The spectacle of 'democracy eating itself up.' Millions added to tax pay rolls, living lives of political overseers, enjoying a standard of living to which they were never accustomed. The spectre of inflation or repudiation.

"In broad strokes, there is the picture of our experiment of substituting for the old-time American way an adaptation of imported ideas—which glorify political authority at the price of the people's liberty—ideas which assure the growth of authoritarianism while the people languish in the frustration of their wills and energies.

"If the forgotten 40,000,000 who have patiently and resourcefully kept at work during these years of daily alarms of new regulations could articulate, they would join in the New Year's resolution, 'Yes, we want no red herrings in 1939.'"

ECONOMY IN MEDICATION

By economy in medication Bernard Fantus, Chicago (*Journal A. M. A.*, March 19, 1938), does not mean the use of inferior remedies, for the first principle of economy in prescribing is that the most efficient remedy is likely to be the cheapest. The second principle in the economy of medication should be: Among drugs of equal efficiency, choose the least expensive. What this might mean in the case of hypnotics and analgesics is illustrated by tables. Two of the three most efficient hypnotics, namely, chloral hydrate and barbital, are also the cheapest. In such large institutions as the Cook County Hospital, the saving resulting from cooperation between the prescribing physician and the dispensing pharmacist might easily run into huge sums. Even in private practice it pays to economize in medication. Some physicians are nothing less than spend-thrifts and wasters when it comes to prescribing. Economies can be practiced in the preparation of hypnotics, analgesics, disinfectants, placebos and in the drug room. These are discussed separately.

MEDICAL ECONOMICS

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The indictment of some of the officers of the American Medical Association and the Medical Society of the District of Columbia in the Federal Court is undoubtedly the most important medical economic development of the month. Regardless of the final outcome of the suit, the indictment has focused the attention of the newspaper reading public on the medical profession and has prepared the soil for further propaganda in the near future when the Congress meets. Every medical Journal coming to the desk of the writer gives some new light on either the methods used by the Interdepartmental Committee in the past or the ideas and opinion of some observer as to what is being planned at Washington for the medical profession in the coming Congress.

We would suggest that every member of the profession read two articles in the current number of the *Medical Economics*, for December. The first is found on Page 35 and is an editorial by H. Sheridan Baketel entitled "Our Political Line-up." This presents the idea of the Chairman of this Committee much more clearly and briefly than he is able to, and should make every member of the Illinois State Medical Society do some real thinking. We must face the facts and try to figure out the proper treatment of the affection. The second is found on Page 49, and is entitled "The Committee of Seven Goes Begging." Many of us have felt for some time that the medical profession has been "pushed around" a little to use the common term. There can be no argument that we have been ignored and the planning at Washington has been in the hands of non-medical folk. At times it has seemed that the medical profession was being deliberately placed in a compromising position and made to look bad. This article by a layman, Patrick O'Sheel, presents the best account of what was done and what was not done at the Conference of the Committee of Seven from the

American Medical Association and the President's Interdepartmental Committee to come to the attention of the writer. Many facts are presented, and we must accept them as facts, which have been hinted at before, but not definitely stated. If all the facts are as presented, it seems that the conference between these two groups might just as well not been held as far as convincing either side that the other has a just reason for a difference of opinion. In a country such as this such an attitude is indefensible. It makes just such action as the Editor suggests in the editorial above referred to the more necessary and urgent. Now if your patience is not exhausted turn to page 31 and read the article entitled "The F.S.A. Adopts a Half Million Patients." Follow this with exhaustive article on Page 23 of the *Saturday Evening Post* of December 17 by Samuel Lubell and Walter Everett on "Rehearsal for State Medicine." Then if you are not convinced that the boring from within has been and is being carried out successfully by governmental employees, there is no hope of convincing you that there is any danger confronting the medical profession at this time. We wish to quote particularly the closing paragraph of this article for your careful thought. "If this review of a rehearsal seems to have raised more questions than it has answered, let that be the moral of the story." That expresses the underlying ambition of the writer of this column for the past four years. If we can just get the medical profession to believe that dangers are imminent to the future of the practice of medicine and that there is still time to do something and this something must be done by the entire profession getting together and forgetting political parties and petty jealousies then all the effort expended has not been in vain.

Newspapers report that the California Medical Associations have adopted a plan for fur-

nishing Medical and Hospital care to citizens in certain salary groups on a prepayment basis of a certain sum each month. Although this subject has been presented in a limited degree in the official *Journal of the California State Medical Association, California and Western Medicine*, it seems unfair to discuss or criticise the plan until it has been officially presented in detail. Certainly we are correct in saying at this time, that this is a revolutionary step, which will be noted with great interest all over the United States by the medical profession in particular as well as the laity. Whether it is well timed for the future of medicine is a matter of opinion and time alone can properly evaluate that. The plan has been enthusiastically received by the press of California, and now that it has been officially adopted it is to be hoped that it will have a fair trial and that the medical profession will continue in complete control of the entire plan during this trial period.

Recently, in the December issue, *The Commentator* made some very general statements as to what could be done in the United States to save life and diminish sickness. According to their calculations both morbidity and mortality could be greatly reduced by proper adequate medical care. NO statement was made as to the source of their information and while no severe criticism of the medical profession was made, the intimation was clear that the present system of furnishing medical care was very inefficient. This type of article which apparently was used as a filler on one of the pages where an article was completed without using all the space, seems manifestly unfair to the medical profession. Practically every magazine coming to our attention carries an article on medical care. The majority are not too kind to the medical profession. Apparently, the propaganda mill is against the medical profession.

The Federal Security Administration, formerly called the Farm Resettlement Administration, is back at work in Illinois, trying to get the Illinois State Medical Society to sponsor medical care for their clients at reduced prices after the plan in used in the Dakotas and described in the articles above referred to. Members of the Council are being contacted individually and the merits of the plan ably presented by excellent salesmen. You will recall

that an attempt was made early in 1937 to get the endorsement of the Illinois State Medical Society by the Dr. Williams referred to in these articles, but the Council was unable at that time to see either the need or advisability of adopting such a plan in Illinois. It scarcely seems possible that any further need for the same could have developed since that time for we have had excellent crops the past two years and the A.A.A. has ladled out assistance to farmers so lavishly that, even the clients of the F.S.A. should be able to pay their doctor bills without the help of the government. We understand that the F.S.A. is making a survey of the medical needs of their clients for the past two years to determine the need of the adoption of some plan for more adequate care at reduced prices. It is the old story of more for less. Action on this question may come up at the next meeting of the Council at Rockford on January 8, 1939.

The report of the Governor's Committee on State Maternal Welfare will present both a report and a recommendation for the improvement and regulation of the obstetrical departments of hospitals in the state of Illinois. Some of these are advisable, but some of those presented seem to be entirely too drastic for many of the smaller hospitals in Illinois. It is to be hoped that the Council will give the report serious consideration and not adopt anything which will handicap the hospital or physicians of the state in conducting the practice of medicine in the obstetrical field.

The Committee extends to every member of the Illinois State Medical Society the compliments of the season and hopes many of the economic problems now facing the profession will be solved to the benefit of both the laity and the medical profession.

E. S. Hamilton,

Chairman, Committee on Medical Economics.

FULL CITIZENSHIP REQUIREMENT FOR LICENSURE

The House of Delegates of the American Medical Association at the San Francisco meeting approved a resolution to be submitted to the Federation of State Medical Boards and to the officers of each examining board of the United States with the request to consider seriously the urgent need for adoption of such rules and for

legislation necessary for the additional licensure requirement of full citizenship of foreign medical graduates.

It is hoped that all state boards will give this important matter serious consideration and advise the Federation office of any action taken so as to guide the Federation in preparing for the official consideration at the next annual session in February, 1939.

The resolution states in full:

WHEREAS, The license to practice medicine and surgery in many countries is limited strictly to citizens of these countries; and

WHEREAS, In addition to holding full citizenship, each applicant is required in several of these countries to show that his medical education was pursued and completed in said countries; and

WHEREAS, Many foreign graduates in medicine and surgery in increasing numbers are seeking admittance to the practice of medicine in these United States; and

WHEREAS, In order to convey adequately to these applicants a full and satisfactory knowledge of the American conception of patriotism and of ethical ideals in medicine, it is necessary that a period of residence be required; therefore be it

Resolved, That in addition to the requirements for foreign graduates, as outlined in a resolution adopted by the House of Delegates for the American Medical Association in 1936, it is highly desirable that an additional requirement of full citizenship in the United States of America be demanded; and be it further

Resolved, That the House of Delegates of the American Medical Association approve the foregoing and that a copy be sent to the properly constituted officers of each examining board of the United States and to the Federation of State Medical Boards, with the request that they consider seriously urgent need for the adoption of such rules and/or legislation necessary to put the purpose of these resolutions into effect.

TULAREMIA IS PREVALENT OVER THE UNITED STATES

A press service release December 23, from the United States Public Health Service speaks of the Tularemia situation. We quote:

With reports for November and December, the two months of greatest prevalence, not yet available, a total of 613 cases of tularemia has been recorded to date in 1938. This figure does not include cases occurring in Illinois, Ohio, Virginia, and Kentucky, where, for the past twelve years, the highest incidence has been reported.

"While tularemia does not represent a major health problem," says Medical Director, United States Public Health Service, "nevertheless, the

fact that so much distress and mortality could have been avoided by reasonable precautions, renders the subject more interesting than the numbers imply. There had been 8,000 cases with 396 deaths reported up to 1938."

It would seem that sufficient warning had been given by the Service and other public health agencies, "so that the average citizen might be informed of the dangers offered by wild rabbits and some other animals.

"Yet cases of tularemia continue to occur in progressively greater numbers each year in which, apparently no precautions have been taken. This is an excellent illustration of the cultural lag which occurs between the acquisition of valuable knowledge by scientists and its practical application by populations."

Discovered in 1910, named in 1920, and elucidated from beginning to end by Public Health Service investigators, human cases of tularemia have been recognized everywhere in this country except Connecticut and Vermont. In the decade after 1925, it was variously reported in Japan, Russia, Norway, Sweden, and Austria.

An acute infectious disease caused by the *Bacterium tularensis* (after Tulare county, California, where first found), it occurs under natural conditions in over twenty kinds of wildlife, with cottontail, snowshoe, and jack rabbits the chief reservoirs and direct causes of over 90 per cent of the human cases in this country. Man becomes infected by contact of his bare hands with the raw flesh and blood of these animals, or by bites of blood-sucking ticks and flies which have previously fed on infected animals.

Hunters, market men, cooks, and housewives become infected when skinning or dressing wild rabbits. Their bare hands may become covered with blood when they pull out the livers and spleens. If by chance there is an open sore or cut on the hands, the infection may enter the wound on the hand and cause the disease. When a rabbit is shot, its bones often become shattered into sharp fragments. If, in dressing an infected rabbit, one of these fragments of bone pierces the skin of the hands, the infection may enter at that point.

About three days after exposure to such a wound infection, illness begins with headache, chilliness, vomiting, aching pains, and fever. The patient may think that he has influenza and

go to bed. The sore on the hand, or elsewhere, develops into an ulcer. The glands at the elbow or in the armpit become enlarged, tender, and painful, and later may develop into an abscess. There is sweating, loss of weight, and debility. The illness lasts ordinarily about three weeks, and is followed by a slow convalescence which may extend two or three months. Most patients recover without any bad after effects, but about 5 per cent die, especially if the case is complicated by pneumonia.

One who has recovered from an attack of tularemia need not fear a second attack, because he is then immune to the disease. There is no record of a second attack in man. There is only one record of the transfer of the infection from man to man. Doctors, nurses and attendants caring for the sick have not contracted the disease.

Tularemia has no seasonal prevalence except as it is influenced by insects or by contacts with infected animals. Laboratory infections may occur at any time. Human cases are more prevalent in summer time in the western states where ticks and deer flies are the cause of infection. Human cases, due to infection from dissecting jack rabbits, are likewise most prevalent during April to October, because these are the months of greatest destruction of these pests. East of the Mississippi, cottontail rabbits are responsible for most human cases, and since they are generally protected by law except during a few winter months, the seasonal prevalence is apt to be November to January, when the hunting season is on.

Rabbits raised under domestic conditions and sold for food or for pets, have never been found naturally infected. They are just as susceptible to artificial inoculation in the laboratory, however, as are the wild rabbits.

The prevention of tularemia is almost entirely a matter of personal precaution. No curative or preventive serum has been perfected. Sick or dead wild animals which are found should not be handled; forget about the rabbit which you can stalk on foot and knock over with a stick. Any carcasses in which peculiar whitish spots are found on both liver and spleen should be discarded and buried or burned.

Keep the bare hands out of a wild rabbit. The bacillus of tularemia does not require a wound

for its entry, but can go through the healthy skin. Sometimes infection is contracted by rubbing the eyes with soiled fingers.

Rubber gloves afford reasonable protection to those who must dress wild rabbits and other animals, but sharp fragments of rabbit bone can easily pierce a rubber glove and puncture the hand. Employ immune persons when contact with infected material is necessary.

Thorough cooking of all wild game, especially rabbits, is essential. Infected meat is rendered harmless for food by thorough cooking, but if any red juice is allowed to remain about the bones, the germs will remain alive and virulent.

The liberal use of soap and water and disinfection of the hands are recommended to remove rabbit blood from the hands, or even when the hands have come in contact with the rabbit's fur.

EDUCATIONAL COMMITTEE REPORT FOR NOVEMBER AND DECEMBER, 1938 SCIENTIFIC SERVICE PROGRAMS

Sixty-seven scientific programs were arranged for the following counties:

Lake	Will-Grundy
Fulton	Carroll
Stephenson	JoDaviess
Southern Ill. Med. Assoc.	Kankakee
Hancock	Jersey
Bureau	Greene
DeWitt	Monroe
LaSalle	2nd Councilor Dist.
Coles-Cumberland	Henry
DuPage	Knox
Warren	Wabash
8th Councilor Dist.	Montgomery
Macoupin	Williamson
Scott, Iowa	Beardstown
Effingham	Fulton
Lee	Franklin

Maternal Welfare conferences were held in Jersey-Greene, Knox-Warren, Lake, Montgomery-Macoupin, Stephenson, JoDaviess-Carroll, Bond-Clinton-Marion.

These Maternal Welfare meetings were well attended, perhaps the largest number at one meeting being 300 doctors.

AID TO COUNTY MEDICAL SOCIETIES

The office of the Educational Committee endeavored to promote the scientific meetings of county societies by assisting secretaries in sending invitations. During the two months the Committee prepared the notices for the following counties:

- 214—Henry
- 268—2nd Councilor District
- 84—Crawford-Wabash, Lawrence and Jasper
- 313—DeKalb and LaSalle
- 185—Lee

- 100—Bureau
- 93—Effingham
- 98—Franklin
- 262—Perry
- 328—8th Councilor District Meeting

RADIO PROGRAM

27—Radio programs were given over stations WAAF, WJJD and WGN. In addition to the broadcasts over these Chicago stations, a number of downstate counties used the same talks for rebroadcasting over their local stations.

A variety of types of programs have been given during the period, including a series of eight by a doctor and his secretary entitled, "Leaves From a Doctor's Diary."

Plans are now being formulated for a series of programs in foreign languages over one of the Chicago stations. There is a real need for this type of program and the talks will be made as simple as possible.

POPULAR PROGRAM FOR THE LAITY

79—Popular health talks were scheduled for lay groups throughout the state. It was interesting to note the variety of audiences and the fact that talks were so widely distributed covering the following cities: Mattoon, Robinson, Effingham, Sterling, Sycamore, Gardner, Oak Park, Chicago, Kewanee, Tremont, Springfield, Carthage, Princeton, Shelbyville, Pittsfield, East Moline, Danville, Alexis, Edwardsville, Woodson, Quincy, Winchester, Rushville, Barry, Mason City, Havana, Dwight, Colfax, Fulton, Olney, Clinton, Pekin, St. Charles, Sheffield, Ziegler, Litchfield, Nashville.

The subject of "Socialized Medicine" holds the leading place in the topics requested for discussion. The Committee has sent much material to college and high school debating teams who are presenting the subject. The American Medical Association has given the Committee much help.

The Committee has cooperated with the Chicago Community Forum Service in scheduling speakers to share in forums in various centers in the metropolitan area.

NEWSPAPER SERVICE

- 756—Health articles to Illinois newspapers.
- 141—Health articles to Chicago newspapers.
- 1,098—Editorial style articles to newspapers.
- 5,274—Health articles sent to prominent laymen, Home Advisers, Health Chairmen, W.P.A. Teachers, Red Cross, etc.
- 840—Health articles to libraries.
- 1,026—Health articles to hospitals.
- 20—Releases for 2nd Councilor District meeting.
- 57—Releases for 8th Council District meeting.
- 73—Releases for DeWitt County Medical Society.
- 38—Releases for Henry County Medical Society.
- 27—Releases for Effingham County Medical Society.
- 50—Releases for Lee County Medical Society.
- 25—Releases for Bureau County Medical Society.
- 3—Releases for Clinton County Medical Society.
- 12—Releases for Wabash County Medical Society.

14—Releases for Chicago Medical Society.
Press articles were written and approved on these subjects:

- Diphtheria vs. Immunization.
- Fallacies About Infants.
- Thanksgiving.
- Winter Woes.
- The 1939 Outlook.
- Discovering Tuberculosis.
- Safe at Home?
- Influenza Warning.
- Thanksgiving Greetings.
- Benjamin Franklin.
- Joy and Sorrow from the Automobile.
- Children and Colds.
- Adequate Prenatal Care
- Merry Christmas and a Healthy New Year.

MISCELLANEOUS

Copy of Dr. Neal's paper on "Socialization of Medicine" was sent to the entire lay list, libraries and hospitals.

Material prepared and mimeographed for the Illinois Federation of Women's Clubs.

Special material prepared for the Maternal Welfare Committee and articles mimeographed for distribution at public meetings sponsored by the local counties.

Request from the Superintendent of a City School, downstate, that the Committee furnish all pupils in health classes with copies of its health education material.

Request from District Governor of the Lions International for suggested programs suitable for Lions Clubs.

Meeting with a Committee from the Pediatric Society to discuss the handicapped child of Illinois.

Conference with advisor of Harrison Technical High School concerning special programs for freshmen and sophomore students.

Conference with representative of the Chicago Board of Education regarding proposed courses to be offered in Junior College.

Committee invited to have exhibit of its work at the Mid-Winter Meeting of the Chicago Dental Society which is attended by 10,000.

Assistance given to the Scientific Exhibit Committee of the State Society.

Respectfully submitted,

Jean McArthur.

SCHOOLS ASK FOR EDUCATIONAL COMMITTEE MATERIAL

The Educational Committee received the following letter from the Superintendent of Schools of an Illinois city:

"For some time I have been receiving regularly your bulletins. The material is so terse and pertinent that I have called the attention of my teachers of health to them. They are wondering if copies could be secured for each of the members of their classes, 170 in all.

"I realize this is not the use for which the bulle-

tins were intended originally, but I am wondering if you have a plan by which they might be made available."

* * *

The Medical Director of one of the Illinois Tuberculosis Sanatoriums also makes a comment on the material sent out by the Educational Committee:

"You recently sent me a bulletin DISCOVERING TUBERCULOSIS. If possible I should like to have several copies of this bulletin and any others you may have. I think this bulletin DISCOVERING TUBERCULOSIS is the best article on tuberculosis for educational purposes that I have come in contact with."

ILLINOIS STATE MEDICAL SOCIETY

100% PAID FOR 1938

Adams	JoDavies
Alexander	Johnson
Bond	Knox
Boone	McLean
Cass	Marion
Clark	Mason
Clay	Massac
Clinton	Monroe
Coles-Cumberland	Morgan
Crawford	Piatt
DeKalb	Richland
Douglas	Schuyler
Edwards	Shelby
Effingham	Stephenson
Fayette	Tazewell
Henderson	Vermilion
Henry	Washington
Iroquois	Wayne
Jasper	Woodford
Jefferson-Hamilton	

I DO NOT LOVE YOU DOCTOR FELL; YOU CARVE TOO FLUENTLY AND WELL

I do not love you, Doctor Fell; the reason why, I'll briefly tell:

The doctor of the olden days had kindly words and pleasant ways; and though his pills were on the bum, and sent folks off to Kingdom Come, and though he liked to swell the hosts of skeletons and sheeted ghosts, it never was his foolish plan to use a saw on every man. Unlike the modern maniacs, who carve their patients with an axe, he dealt out calomel or nux, and soaked us for a pair of bucks, and if he killed us—good old soul! he left us to be planted whole.

When I am sickly and unstrung, you ask me to unfurl my tongue; you feel my pulse and prod my back, and say my liver's out of whack, and then you shed your vest and coat, and push a lantern down my throat, and say: "Great Caesar! What a heart! I'll have to take you all apart." And on your table I am laid, while you go out to hunt a spade, to dig around among my works and find the blamed old germ that lurks around the angles of my frame—the way you carve me is a shame.

When winter comes, with frost and snow, I have a chilblain on my toe; and when for liniment I beg, you want to amputate my leg; and when my throat gets sore and raw, you want to cure it with a saw; to cure my baldness you, I ween, would run me through a guillotine. A leg of mine is now at rest among the doctors of the West; an Eastern doctor has in brine about eight inches of my spine; the jaw that once adorned my mouth, is kept in pickle in the South.

I do not love you, Doctor Fell; you carve too fluently and well; I fear you and your edged tools; I'll send to correspondence schools for absent treatment when I'm ill—or hit the good old-fashioned pill.

—Walt Mason in the Emporia Gazette.

THE AMERICAN CONGRESS ON OBSTETRICS AND GYNECOLOGY

The American Congress on Obstetrics and Gynecology will meet in Cleveland, Ohio, September 11, 1939.

PRELIMINARY PROGRAM OUTLINE MEDICAL SECTION

(Other sectional programs for mornings and round tables will be published as they are available).

Monday, September 11, 1939

The Thyroid and Pregnancy.
Heart Disease and Pregnancy.
Diabetes and Pregnancy.
Tuberculosis and Pregnancy.
Nutritional Factors and Pregnancy.
The Surgical Abdomen complicated by Pregnancy.
The Treatment of Abortions.

Tuesday, September 12, 1939

The New Conception of Ovarian Neoplasms.
Carcinoma of the Uterus.
Endometriosis.
Ectopic Pregnancy.
Sterility in the Female.

Wednesday, September 13, 1939

Reduction of the Operative Incidence in Obstetrics.
Labor Complicated by the Contracted Pelvis.
Dystocia Due to Soft Parts.
Pathology and Treatment of the Third Stage of Labor.

Thursday, September 14, 1939

Present Day Fundamental Knowledge of Hormones and Endocrine Glands.
Problems of Adolescence.
Problems of Menopause.
Diseases of the Mammary Gland.

Friday, September 15, 1939

Sulfanilamide in Obstetrics and Gynecology.
Pyelitis.
Chronic Pelvic Infections.
Immediate and Remote Complications Following Labor.

ROUND TABLES

Running concurrently each day 11:45 to 1:15
The Toxemias of Pregnancy.
Genital Infections.

Obstetric and Gynecologic Hemorrhages.
The Fetus and the Newborn.
Forceps, Occiput-Posterior and Breech Presentation.
Anesthesia, Analgesia and Amnesia in Labor.

JOINT AFTERNOON SESSIONS

Monday, September 11, 1939

Neonatal Care.

Tuesday, September 12, 1939

Plans for Prevention and Control of Uterine Cancer.

Wednesday, September 13, 1939

Extension Education on Maternal and Neonatal Care.

Thursday, September 14, 1939

Economic Aspects of Maternal Care.

Friday, September 15, 1939

Correlation of and Attempt to Digest All Proceedings.

JOINT EVENING SESSIONS

Monday, September 11, 1939

Legal Aspects of Maternity.

Tuesday, September 12, 1939

Humanitarian Aspects.

Wednesday, September 13, 1939

Sociologic Aspects.

Thursday, September 14, 1939

Ethical Aspects.

AID FOR CRIPPLED CHILDREN

Paul H. Harmon, M.D., Superintendent of the Division for Handicapped Children, reports that sixty clinics for crippled children were held in thirty different sites in this State during the Fiscal Year 1937-1938. In these clinics, 1,744 patients were seen. Of this latter number, 783 were recommended for hospital care. Of this number, 45.6 per cent were hospitalized during the fiscal year, and the majority of the whole number was hospitalized by the date of this report (December 1).

A poliomyelitis consulting program was involved and was in operation during the summer of 1938 in the entire State except within the city limits of Chicago where other agencies covered the field. All cases from the sporadic poliomyelitis of 1938 that needed hospital care were sent to hospitals. There were but twenty-five bona fide cases of this disease during the summer of 1938.

Field nursing and social service in relation to crippled children are both available upon a State-wide basis. The field nurses of the Division for Handicapped Children made 10,410 visits during the year. Appliances were furnished to patients attending the clinics in the following numbers: braces, 138; artificial limbs, 39; orthopedic shoes and shoe corrections, 184. 51,060 days hospital care were provided to crippled children by the Department of Public Welfare. Of this number, 8,426 were in the wards of the general hospitals of the State where orthopedic surgeons are participating in the plan for orthopedic care in the Division for Handicapped Children.

AMERICAN BOARD OF OPHTHALMOLOGY

The American Board of Ophthalmology announces an important change in its method of examination of candidates for the Board's certificate.

Examinations will be divided into two parts. Candidates whose applications are accepted will be required to pass a WRITTEN examination which will be held simultaneously in various cities throughout the country approximately 60 days prior to the date of the oral examination.

The WRITTEN examination will include all of the subjects previously covered by the practical and oral examinations.

ORAL examinations will be held at the time and place of the meeting of the American Medical Association and of the American Academy of Ophthalmology and Oto-Laryngology, and occasionally in connection with other important medical meetings. The ORAL examination will be on the following subjects: External Diseases, Ophthalmoscopy, Pathology, Refraction, Ocular Motility, Practical Surgery.

Only those candidates who pass the written examination and who have presented satisfactory case reports will be permitted to appear for the oral examination.

Examinations scheduled for 1939: WRITTEN, March 15th and August 5th. ORAL, St. Louis, May 15th; Chicago, October 6th.

Applications for permission to take the written examination March 15th must be filed with the Secretary not later than February 15th.

Application forms and detailed information should be secured at once from

Dr. John Green, Secretary, 6830 Waterman Ave., St. Louis, Mo.

MEETING OF THE NORTH CENTRAL FORUM OF ALLERGY

Physicians interested in allergy are invited to attend the North Central Forum on Allergy to be held at the Commodore Perry Hotel, Toledo, Sunday, January 15.

The meeting will open with an informal "get-together" Saturday evening, January 14, at the Commodore Perry Hotel. Physicians planning to attend the Forum are urged to arrive in time for this social session which may be the high-light of the meeting.

The program for the two sessions, Sunday, January 15, follows:

Morning Session, 10:00 A. M.

1. Food Allergy—

"Diagnostic Measures," by Dr. Samuel M. Feinberg, Chicago; discussants, Dr. M. A. Weitz, Cleveland, and Dr. Sam Levine, Detroit.

"Value of Skin Tests in Diagnosis of Food Allergy," by Dr. George Waldbott, Detroit; discussants, Dr. Albert Zoss, Cincinnati, and Dr. I. M. Hinnant, Cleveland.

"Dietary Management of Food Allergy," by Dr. Jonathan Forman, Columbus; discussants, Dr. David M. Cowie, Ann Arbor, and Dr. George L. Lambricht, Cleveland.

2. "Drug Hypersensitivity," by Dr. John H. Mitchell, Columbus; discussants, Dr. Barney Credille, Flint, and Dr. Frank Menagh, Detroit.

Luncheon—Crystal Room, Commodore Perry Hotel.

Afternoon Session, 2:00 P. M.

"Preparation of Protein Extracts," by Dr. Milton B. Cohen, Cleveland, discussants, Dr. Leon Unger and Dr. Tell Nelson, Chicago.

"Preparation of Plant Oil Extracts for Diagnosis and Treatment," by Dr. L. E. Seyler, Dayton; discussants, Dr. John Sheldon, Ann Arbor, and Dr. Wm. P. Garver, Cleveland.

(Papers limited to ten minutes each; discussants limited to five minutes).

This meeting was planned to foster acquaintance and exchange of ideas of members of the Cleveland, Chicago, Michigan and Ohio Valley Society of Allergists. However, any physicians, in good professional standing, who are interested in allergy are most welcome.

Further information can be obtained by addressing Dr. Karl D. Figley, 316 Michigan Street, Toledo, Ohio.

CARING FOR THE INSANE

According to U. S. Public Health Service current incidence rates indicate that one of every twenty persons born in 1938 will be committed to a mental hospital some time during his life span.

Because of the increasing proportion of the population in the older age groups, an increase in the number of admissions to mental hospitals is to be expected in the future, since rates of mental disease are highest in the older age brackets.

Since there is no sharp line of demarcation between normality and abnormality, it is practically impossible to determine whether the relative number of persons with mental disease is increasing.

Fundamentally, even though there is a definite physical basis for many mental disorders, mental disease—or insanity, as it is popularly called—is a cultural concept, and varies from one group to another. In some situations the mentally deranged have become soothsayers, medicine men, prophets, or leaders; in other situations the same persons would be incarcerated.

Those conclusions have been developed from a comprehensive study of recent data by Dr. Harold F. Dorn, Statistician, United States Public Health Service. They are discussed by him in a paper, "The Incidence and Future Expectancy of Mental Disease," in the current issue of *Public Health Reports*.

To a certain extent, the increase in the number of first admissions to mental hospitals merely reflects an increase in hospital facilities, Dr. Dorn pointed out. In order to eliminate this factor insofar as it was possible, the data used in this study were the number of first admissions to mental hospitals in Massachusetts, New York, and Illinois where facilities have been fairly adequate for several years. In general, these data do not support the contention that the incidence of mental disorders had been rapidly increasing.

This does not mean, however, that the public burden

of caring for persons with mental disease has not been increasing. The average number of patients in State hospitals increased 40% (from 248,852 to 347,620) between 1926 and 1935. But, rather, it means that most of the increase may be attributed to increase in the expectation of life, an increasing proportion of old people in the population, increasing urbanization, and other environmental factors. As the standards of care and treatment are raised, the total cost will increase although there is no increase in the incidence of the disease. (It is estimated that the current annual cost of hospitalized patients alone is between \$150,000,000 and \$200,000,000, and that these patients occupy 47% of the total number of hospital beds.)

It is gradually becoming accepted, according to Dr. Dorn, that mental aberration is simply a form of illness which may often be cured or alleviated by suitable care and treatment. This attitude is clearly reflected by the fact that the "insane asylums" of fifty years ago have become "mental hospitals" today. Commitment to a hospital is no longer universally regarded with the same horror as formerly.

TOBACCO SMOKE CAUSES CONSTRICTION OF THE BLOOD VESSELS

Doctors E. A. Hines, Jr., and Grace M. Roth of the Mayo Clinic before a staff meeting, August, 1938, stated that cigarets raise the blood pressure in both normal persons and in patients suffering from high blood pressure. Their observations were based on a study of 86 persons.

The effect of tobacco smoking on blood pressure is not due entirely to the action of a stimulus on specially sensitive blood vessel systems. Part of the effect, at least, is a result of some element in tobacco smoke which causes constriction of the blood vessels. This element in the tobacco smoke was not identified in the report made by the two scientists at a recent staff meeting.

The rise in blood pressure following smoking was greater in high blood pressure patients than in normal persons except in the case of high blood pressure patients who had never smoked before. This latter difference is attributed to the fact that inexperienced smokers do not inhale as much smoke as regular smokers.

The test was made by having each person, after a 30-minute rest, smoke two cigarets of a standard brand. Blood pressure and pulse rate were watched during the smoking and for a few minutes afterward. As a control, each person went through the same procedure except that he puffed at an unlighted cigaret.

The results were also compared with results of the cold pressor test, in which one hand is immersed over the wrist in a bucket of ice water. The excessive rises in blood pressure from smoking, the scientists found, occurred only in the patients who had, according to the cold pressor tests, hyperreactive blood vessel systems.

To make its peace with the Department of Justice the American Medical Association might join the C. I. O.

Original Articles

AN APPRAISAL OF COMPULSORY HEALTH INSURANCE

J. R. NEAL, M. D.

Past President, Illinois State Medical Society
SPRINGFIELD, ILL.

Fundamentally the current wave of popular interest in the proposition of making medical care cheaper and more easily available arises from a deep-seated and universal desire for security, happiness and what lately has been dubbed "the more abundant life." In this desire we all share alike. The doctor no less than the banker, the carpenter, the farmer and the business man wishes for himself and his family the best and most tranquil life that may be attained in this precarious and uncertain world. He, like every other person of normal ambition, wishes to feel that there is sufficient stability in economic and social practice to permit him to make plans with a reasonable prospect of fulfillment. National and international affairs have conspired against peace and tranquility during recent years, however, and have moved in a direction to disturb men's minds and try their spirit. Restlessness prevails everywhere. Tranquility is gone. No one feels secure socially, politically and economically. Uncertainty is almost universal. "Chaos" and "madness" are words used freely by men in high places to describe the chief characteristic of the present time. Attempts at changing things long regarded as fundamental have robbed the man in the street of confidence and instilled in his heart a haunting fear.

People everywhere have in this way been placed in the position of a drowning man grasping at whatever he finds within reach. This situation explains all of the reform legislation which we have witnessed, much of it already found by the painful method of trial and error to be basically false and little more than an empty gesture. It explains the popularity of such fantastic schemes as the "Townsend old age pension" the "Huey Long Share the Wealth Plan" and the silly "Thirty Dollars Every Thursday" proposition. It explains in large degree the agitation for some new scheme of medical practice. The idea that health can be main-

tained through free medical care no matter what else may befall has seized upon the imagination of many people as the way out of a wilderness and greatly to be desired.

No one disputes that better medical care for more people is desirable. No one disputes that the gap between available medical knowledge and practice is too wide for the best interests of society. No one disputes the potentialities of improving health substantially in many respects. That free medical care alone will do the trick or that socialized medicine would be a particularly important factor toward those desirable ends is subject to debate. Sharp differences of opinion prevail, therefore, as to the methods by which better and more satisfactory medical care can best be provided to more people. The proposition of compulsory health insurance or socialized medicine has found favor in some quarters. The soundness and the desirability of this proposition is challenged by the medical profession.

This opposition is founded on solid ground. Compulsory health insurance has been tried extensively and is still operating abroad and schemes of socialized medicine financed in other ways have been established in limited groups for a long time in this country. There is no valid evidence that any of these schemes has produced benefits that cannot be had in other and more satisfactory ways and that have not been equalled and even surpassed by methods which have prevailed generally in the United States.

All of the principal nations of Europe maintain systems of socialized medicine of one kind or another. Most of these schemes have been operating for at least a quarter of a century, some considerably longer. It is significant, therefore, that health conditions in the United States are superior from almost every point of view to those in any of the World Powers of Europe or Asia.

The average life span in the United States, for example, is about 62 years compared with 61 in England, 61 in Germany before the annexation of Austria, 55 in Italy and even less elsewhere in the Scandinavian countries. Several commonwealths in the United States have records fully as favorable as the Scandinavian nations with which they compare in land area and density of population.

The general death rate is lower in the United

States than in any of the Great Powers of Europe. For 1935, the most recent year for which extensive data are available, the death rate per 1000 population in the United States was 10.9, against 11.8 in Germany, 11.7 in England and Wales, 13.6 in Austria, 15.7 in France and 13.9 in Italy. For 1935 the infant death rate was 56 per 1,000 births in the United States, 57 in England, 68 in Germany, 69 in France, 100 in Austria and 101 in Italy. Sharp improvement has taken place in these rates in the United States since 1935 but evidence of similar improvement abroad is lacking.

With respect to communicable diseases the United States enjoys an even greater advantage. From diphtheria, for example the death rate per 10,000 population in the United States in 1935 was 3.3 against a rate of 5 in France, 6.7 in Italy, 9.7 in Germany, 10.1 in England and Wales and 14.9 in Austria. The prevalence rate of diphtheria during the first six months of 1938 was only 9 per 100,000 people in the United States against 23 in France, 29 in Italy, 80 in England and 85 in Germany. For tuberculosis the mortality rates are about 56 in the United States, 72 in Germany, 76 in England and Wales, 90 in Italy, 110 in Austria and 125 in France.

These illustrations give indisputable evidence that the beneficial practical results of medical care have been more abundant in the United States than in any nation of comparable magnitude where socialized medicine has been established.

In our own country we have the army in which socialized medicine is practiced on what is undoubtedly the highest level of communal efficiency. Here again there appears to be no evidence of greater benefits in the results obtained. The general death rate in the Army, which consists of men selected with great care as to physical fitness, varied from 3.8 to 4.3 per 1,000 at risk during the four years ended with 1935, giving an average rate of 4.1. For the same period among hundreds of thousands of male, white wage earners of comparable age insured by the Metropolitan Life Insurance Company, the death rate ranged from 4.1 to 4.4, giving an average of 4.3. If the advantage of selection is discounted, the experience of the industrial wage earners is fully as favorable as that of the Army.

Furthermore, the annual admission to the sick list in the Army averages about 580 per 1,000 at risk. Among 39,000 families of moderate income residing in all parts of the country, monthly visits by nurses employed by the United States Public Health Service to obtain the facts, it was revealed that during a year there were only 516 cases of illness and accidents per 1,000 at risk which caused the loss of as much as one day from the usual activities. These civilian cases, moreover, included pregnancies and the usual ills of children.

In the Army, moreover, about 8 days per man are lost annually because of illness from diseases alone. Records kept by the United States Public Health Services show that sickness and non-industrial accidents causing disability of one week or more, results in the loss of less than 4 days annually per man among industrial employees.

There are official records of actual experience among large groups of people whose medical care is provided through systems of socialized medicine and large groups whose medical care is not so provided. This meets the scientific requirement of having experimental and control groups. The results show no significant advantage whatever to the people for whom socialized medicine has been provided.

It is proclaimed, moreover, by the advocates of compulsory health insurance that the availability of competent medical advice thus provided would discourage self medication and the sale of nostrums. Experience proves that only disappointment awaits those who pin their faith on that presumption. On that point an editorial in the August 20, 1938 issue of *London Lancet*, reads in part as follows:

"In one respect, however, the report devoted to health insurance is disquieting; taking medical service as a whole, increasing reliance seems to be placed on drugs as a means to health. The average number of prescriptions issued per insured person rose from 4.72 in 1936 to 4.75 in 1937 and the average cost from 3s 1½d to 3s 2d . . . The report states that in some cases the treatment of one patient had cost no less than £240 a year in drugs alone. It was hoped that the working of national insurance would bring about a material reduction in self-treatment by the use of patent medicines, but that has not been so. The craving for self-drugging is skillfully fostered in the advertisement columns of the popular press, and the medical profession is not to blame for it, though practitioners may do much to check it by health education among their patients. For

the increased use of drugs in the insurance medical service, however, insurance doctors have a direct responsibility, both in their individual capacity and collectively through the agency of the panel committee."

Another author in *Lancet* declares, by way of explaining the attitude of doctors when faced with economic problems, that physicians are neither more nor less honest than other people and that honesty varies roughly with financial security. "The panel doctor," he adds significantly, "knows that if he does not issue certificates for 'nervous debility' and 'gastric neurasthenia' his patients with their capitation fees will go elsewhere."

There is direct evidence that compulsory health insurance tends to lower the standard of medical practice and that it may actually result in a higher rate of disability from that multitude of poorly defined and poorly understood class of ills that are born of sick minds. There is such a thing as malnutrition of the spirit and it can be cultivated by schemes which encourage malingering and the habit of enjoying poor health. This is an inherent danger in socialized medicine that can neither be dismissed as trivial nor suppressed through rules and regulations.

There is, moreover, no evidence that people generally in the United States are willing to pay the price in the loss of self esteem that socialized medicine is sure to foster to a considerable degree. Red-blooded people resent being investigated. Above all else they wish to be free to take it or leave it in the matter of being doctored.

At Peekham, in London, for example, there exists an agency known as the Pioneer Health Center. It provides all of the practicable medical facilities for 1,530 people. Free medical examinations and free medical treatment are offered in an experimental effort to determine as exactly as possible just how much pathology and illness prevails and what can be done about it. After 18 months of experience it was found that 9 per cent. approved perfectly well, 8 per cent. were diseased and under treatment while 83 per cent. had something the matter but were doing nothing about it. After a study to determine why the procrastination in the 83 per cent. the investigators concluded that adults do not usually care to seek treatment until they are socially disabled.

In an experiment among its employees at

weight reduction as a health measure, the Metropolitan Life Insurance Company discovered the same truth. The authors of that project concluded that: "The self-discipline required to maintain a permanent reduction of weight is evidently too severe for most overweights, who, generally, are inclined to self-indulgence."

After a course of dietary treatment given free by medical officers of the company to 294 employee overweights, and which caused a satisfactory loss of excess fat, only 1 in 5 of those checked up at the end of five years after the termination of medical supervision continued to follow the dietary regimen. All of the others had regained all weight lost during the course of treatment and an average of 10% more.

It appears more than probable, therefore, that the great majority of adults in the United States now receive about as much medical care as they are willing to accept. To stimulate a greater desire and a greater demand for medical care, it seems perfectly clear that efforts must be directed along educational lines rather than providing a free service at public expense.

This, indeed, has been demonstrated in the Scandinavian countries which enjoy the most favorable health conditions found anywhere in Europe. A British commission was appointed about a year ago to study the Scandinavian administrative system with respect to syphilis control in order to discover what factors were most important in the rapid suppression of that disease in those nations. It was found that the reduction of syphilis was fully as great in Holland, where neither free treatment nor compulsory notification prevails, as in Denmark and Norway and almost as great as in Sweden where treatment is free to all and where the reporting of cases is required by law. The British Commission concluded that neither free treatment nor compulsion with respect to notification or treatment is a major factor in the control of syphilis. The improvement was attributed largely to a high level of education and intelligence in the population and to a homogeneous people. Undoubtedly these principles would hold good concerning other ills.

If there is little prospect of significant improvement in general from a system of socialized medicine there are good grounds for anticipating serious sociological, political and economic disadvantages from the adoption of such

a scheme. In the first place, the cost would be enormous adding a heavy load to an already tax burdened people. The Interdepartmental Committee appointed by the President estimated that the annual cost of a nation-wide compulsory health insurance system would be at least two and one-half billion dollars, about \$20 per head of the entire population. It would be too much to expect that political spoilsmen would not be attracted to an enterprise of such financial magnitude.

An even more serious political danger is inherent in such a proposal. Anything approaching a nation-wide compulsory health insurance scheme would involve a gigantic administrative personnel under governmental domination. This would be a powerful piece of machinery susceptible of employment for political purposes. In the hands of a Huey Long, it could be transformed into a superlative agent of Fascism. It would lend itself admirably to the destruction of political and social freedom.

That a system of compulsory health insurance limited to low income groups would be abused by the well-to-do needs scarcely to be mentioned. We have witnessed the constant liberalization of the Veterans Hospital System until no pretense is now made to limit the service to the financially needy. Newspaper reports have it, moreover, that a member of the President's Cabinet, who was neither the Secretary of the Army or Navy, was admitted to the United States Naval Hospital in Washington for an extended period of recuperation. Inquiry failed to reveal any legal grounds for extending this service to the cabinet member. These illustrations suggest the practices that would undoubtedly evolve on a large scale among the great and the petty administrators of a compulsory health insurance scheme.

It would seem from these observations and considerations that our path in America lies in a direction away from socialized medicine if the best interests of society are served and the principles of democracy preserved. We heartily approve of an extension of the public health service which has already produced benefits of incomparable magnitude. Through efficient and adequate public health service the people generally are educated in preventive medicine and they are protected from preventable diseases

more effectively than by any other means that has ever been devised.

We favor an extension of hospital facilities where needed and endorse the pre-payment plans which have proved to be practicable and economical. We favor a system of insurance to protect low-income people from serious financial loss on account of illness. We favor government aid, under local administration, for providing medical and hospital care for the needy in order to spread the cost.

In a special session that met on September 16, 1938, the House of Delegates of the American Medical Association surveyed with great deliberation the whole field of medical care and public health service. It recommended an expansion of public health service as related to certain infectious diseases to maternal and infant welfare and to similar projects with the definite understanding that the need be established and the administration be efficient and economical. It approved the principal of hospital insurance and of *cash indemnity insurance* for meeting the cost of sickness. It recognized the need for complete medical service to the indigent and the necessity for governmental aid in financing this service. It emphasized, with respect to all of these things, however, the establishment of need, local, efficient and economical administration and the maintenance of high professional standards.

The House reaffirmed and emphasized the opposition of organized medicine to any compulsory insurance plan.

The Illinois State Medical Society is in complete accord with the principles and endorsements of the House of Delegates of the American Medical Association. Physicians everywhere are devoted to the cause of better health. Physicians have been responsible for the inauguration and development of public health services and of practically every other organized movement which has brought to the people of the United States a degree of healthful living unequalled in any other great nation in the world. Physicians are unanimous in their desire of continued advancement and improvement in individual and public health. They recognize the pitfalls of socialized schemes, however, and they are determined to preserve the principles of individual freedom, of liberty and of private enterprise in the field of medicine.

THE SEROLOGICAL CONTROL OF NEISSERIAN INFECTIONS BY MEANS OF THE BOUILLON FILTRATE (CORBUS-FERRY):

A Further Report*

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AND

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CHICAGO

Is gonorrhea a systemic infection? If so, are the present-day methods that are accepted as standard for treatment wholly adequate to eradicate the disease?

In 1911 one of us (BCC) called attention²³ to the value of the Wassermann test not only as a diagnostic aid, but also as a serological control in the treatment of syphilis. Time has told the story of its efficacy in the management of this disease.

Complement Fixation Test for Gonorrhea.—The complement deviation reaction was applied to gonorrhea in 1906, but unlike the Wassermann reaction it did not attain the same popularity either as a guide to treatment or as a diagnostic aid. During the last few years numerous articles have been published calling attention to its specific importance. Some of the most outstanding are the following:*

According to Warren, Hinton and Bauer,¹ certain workers signify that it can be relied on as a diagnostic test, yet one finds few clinics in which it is employed with any regularity. Why it has never gained wide acceptance as a diagnostic aid in the study of patients with arthritis is not apparent. In summarizing the tests made on the sera from fifty-two proved cases of gonorrheal arthritis, 80.7% gave positive reactions at all times, while of 239 cases representing other types of arthritis, 91.6% gave consistently negative reactions. They concluded that if the technical imperfection of the method employed can be improved, it is possible that the gonococcus complement fixation test will approach the Wassermann test in its degree of accuracy.

Klamartsik² is of the opinion that some day,

no doubt, it will be possible to prove with its aid that a case is definitely cured. Recovery is indicated when an intensely positive reaction starts to become negative. This same conclusion was reached independently by the authors after extended personal experience with routine complement fixation.

Cohn³ believes that the gonococcus complement fixation test is a valuable aid in the determination of a cure when a previous positive reaction becomes negative, while Birnbaum⁴ writes that there is no doubt about its usefulness. A positive serologic reaction simply points to the possibility of a gonorrheal infection. Absolute proof is brought about by the demonstration of gonococci in the smear.

Hirshland and Hirshland⁵ say that in the satisfactory performance of the complement fixation test for gonorrhea just as for any serological test, a good technic must be strictly adhered to by a responsible technician.

The wholesale examination of sera that is being performed in some clinical as well as some state laboratories cannot help but lead to error. No doubt the complement fixation test will run the gamut of criticism that the Wassermann test did and it will be some time before a routine standard technic can be established.

The authors believe that the complement fixation test in gonorrhea rarely becomes positive before the third week of the disease, and in a simple case of anterior urethritis, if seen early and treated locally, it may never become positive. In systemic invasion and in individuals treated with the bouillon filtrate a positive reaction is to be expected.

The possibility that the gonococcus may invade the system and lie dormant for many years was not generally recognized. However, a review of the literature shows that the rôle of the gonococcus as a causative agent in systemic infections is not new. In 1838, Ricord⁶ described the first case of gonorrheal infection of the heart. Osler⁷ reported a case of endocarditis with cultivation of the specific organism in 1902, and later Thayer⁸ in 1905 reported six cases, and again in 1926 twenty-three cases. In 1934 Stone⁹ reported a case of gonorrheal endocarditis, reviewing the literature and reporting 122 cases. He claims the distinction of being the first to report such a case in the *Journal of Urology*. He also emphasizes the fact that the urologist

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Appended is a bibliography of the complement fixation test for gonorrhea for the last eight years.

should recognize the condition during its incipient state before the heart is irreparably damaged.

Williams¹⁰ in January, 1938, made a study of twelve cases with ten postmortem examinations and states that 150 authenticated cases plus the author's twelve cases, making a total of 162 cases, have been reported. Gonococcal endocarditis was noted in 0.7% of 1719 autopsies at the Vanderbilt University Hospital during the past twelve years.

Spink and Keefer¹¹ demonstrated the gonococcus in the synovial fluid in an arthritic knee twenty years after an infection. Fraser and Dye¹² report an exacerbation of latent gonorrheal urethritis fifty years later, following a prostatectomy.

Thomas¹³ and Irons¹⁴ believe that instances of mild gonococcal septicemia, which ordinarily recover, are considerably more common than is usually recognized.

There is no doubt that grave consequences following gonococcal infections may and do occur, and one is surprised to discover, in making a survey, that the infection can be localized in practically any organ and lie dormant for many years. The following list of systemic infections of the gonococcus have been taken from the world's literature for the last 22 years.

Abscesses	7
Subcutaneous and subfascial	1
Subdiaphragmatic	1
Muscle	5
Kidney	23
Bone	6
Endocarditis	67
Liver	6
Lung	3
Meningitis	13
Nerve	1
Pelvic peritonitis in male.....	1
Purpura and skin	15
Septicemia	105
Tenosynovitis	3
Thyroid	2
Vein	1
Iritis	3
Parotid gland	1
There are 8 cases of septicemia in children following vol-	
vovaginitis and ophthalmia neonatorum, making a total	
of	265

A complete bibliography of the above group of cases accompanies this paper.

As most of the systemic complications of gonorrhea are seen by internists and reported in journals other than urological, there are undoubtedly many more interesting cases than are here recorded. Every case of systemic invasion

of the gonococcus must be considered as a septicemia, varying in its severity.

Skin rashes and erythema nodosum frequently accompany symptoms of the systemic manifestation. However, they are not pathognomonic, as they occur in other infectious diseases, especially chronic tuberculosis. They are considered as allergic manifestations of the infection. The culturing of the gonococcus from the blood stream in septicemia and also in endocarditis is not an uncommon occurrence. The gonococcus has been identified both by staining and culture from the sputum where the lung¹⁵ is involved: also in the thyroid¹⁶ and parotid gland.¹⁷ It is generally accepted that once the infection has gained entrance into the body, it extends by contiguity along the genital tract in the male as in the female, and spreads by the blood stream or lymphatics from foci secondarily established in the body. In many of the cases reported there is a history of gonorrheal arthritis.

Like syphilis, the symptoms of this infection are often so bizarre that its recognition is not always possible. A careful analysis of statistics shows that this infection is on the increase. As we become more conscious of the existence of this disease and the serious possibilities of its latency, greater efforts are being put forward in making a diagnosis and standardizing a rational therapy.

The predisposing factors of this systemic invasion are:

1. Complications resulting from failure in making an exact diagnosis.
2. Traumatism.
3. Inadequate treatment.
4. Lack of criteria for ascertaining when a given patient is "cured."
5. Poor resistance of the host.
6. Virulence of the organism.

From the many different methods of treatment suggested it is obvious that there is a lack of standardization. The following, at the present time, are the most generally accepted:

1. Local by means of bactericides.
2. Hyperpyrexia.
3. Chemotherapy (sulfanilamide).
4. Passive immunization with antitoxin.

1. *Local Treatment.* It is the only method that can be employed in treating gonorrhea as a local disease. However, it is entirely inadequate when the infection becomes systemic.

2. *Hyperpyrexia.* Of all the methods in use, hyperpyrexia alone has shown its efficacy in destroying the gonococcus whenever it has invaded the human organism. Its application, however, is a heroic measure and necessitates hospitalization and special equipment.

3. *Chemotherapy.* Considerable literature has been published during the last year showing the efficacy of sulfanilamide. It is highly bacteriostatic, however, it lacks the power to stimulate the defense mechanism of immunity and may at times be destructive to the formed elements of the hemopoietic system.

4. *Passive Immunization with Antitoxin.*—Anwyl-Davies¹⁸ of St. Thomas Hospital, London, in 1937 reported his experience in treating 178 cases of Neisserian infections with gonococcal antitoxin prepared from horses immunized with the Corbus-Ferry bouillon filtrate. *His publication furnished conclusive evidence of the specificity of the bouillon filtrate.* He says: "Acute and chronic cases, complicated and uncomplicated, respond equally well, which is in marked distinction to other biological preparations hitherto available." As it is an alien serum, administration is frequently associated with severe serum reactions. However, we recommend its use in severe infections such as gonorrheal ophthalmia, later followed by intradermal active immunization with the bouillon filtrate, serologically controlled with complement fixation tests.

The defensive mechanism of immunity in man having been recognized, a gonococcal exotoxin¹⁹ discovered, and the safest method of introducing it applied, how can the treatment of Neisserian infections be improved upon?

Cutaneous Test. An individual infected with the gonococcus is in a state of hypersensitivity to the gonococcus and remains so until he is cured of his infection. With a proper toxin (antigen), antibodies in the blood that are specific for the gonococcus will unite and show a specific cutaneous test. Conversely, with the disappearance of the infection, antibodies are no longer present in the blood and the test becomes negative. This may be concluded as positive evidence of a cure.

Conrad²⁰ in 1936 reported favorably upon his experience with the cutaneous test as a diagnostic aid. (Gonorrhea.)

Recently Wishengrad²¹ of the central Gon-

orrhea Clinic of New York reports its use as a diagnostic test in from 150 to 200 cases. He finds the test easy to read when it is definitely negative or positive. He says further, "I have come to rely on it with a great deal of confidence." Wishengrad used the regular standard therapeutic product, controlling it with the culture media instead of the heated product that was originally reported by the senior author. However, he waits forty-eight hours before interpreting the reaction.

Cumming and Burhans²² have shown that following a cutaneous test, local gonococcal foci are often stimulated (this may be associated with pain in the locus foci), and it is possible to identify the gonococcus by cultural and staining methods in foci that were previously negative. This is comparable to the Herxheimer reaction in syphilis. Where a clinical history points strongly to the possibility of a gonococcal infection, this test should be repeated, using 0.2 c.c. of the filtrate instead of 0.1 c.c.

Numerous French and German authorities have advocated the use of tuberculin in surgical tuberculosis where the state of hypersensitivity is not great, and we ourselves have successfully treated bladder and epididymal tuberculosis with intradermal injections of tuberculin for the last several years.

An individual infected with any organism is in a state of hypersensitivity to that organism as long as it remains in the body. The underlying rationale of the intradermal toxin therapy rests upon the concept that the infected patient is in a state of hypersensitivity to the gonococcus. This means that wherever the organism localizes, either in the primary or secondary sites, there is an over-response to its presence with excessive destruction of tissue. An added indication of this state of hypersensitivity is also to be found in the blood serum of infected individuals as demonstrated by the presence of complement-fixing antibodies.

This is strictly a desensitization technic which overcomes a destructive allergic aspect of the response but not the immunity.

The more likely mechanism responsible for the success of the gonococcal toxin therapy is clearly demonstrated by the following phenomena:

1. Eventual fall in the complement fixation titre.
2. Diminution in response to skin injection.

3. Decrease in the exudative phase of the local lesions.

A given patient with a positive complement fixation test is in a state of hypersensitivity to the gonococcus. He is desensitized to the gonococcus by giving the toxin intradermally.

A given patient with a negative complement fixation test is injected until he is in a state of hypersensitivity and continued on the same management until desensitization is complete (negative complement fixation).

This is comparable to desensitizing a patient with asthma, who has a hypersensitivity to eggs, with small initial doses of egg white.

With increasing evidence that gonorrhea is a systemic disease, during the last eighteen months, both in private and clinic practice, the following plan of treating these infections with bouillon filtrate has been adopted:

First Week—First Day

1. Examination:
 - a. By smear.
 - b. By culture of discharge.
2. Cutaneous test; read results in 24 and 48 hours.
3. Complement fixation text for gonorrhea.
4. Therapeutic dose.



Fig. 1. Intradermal injection. Immunological response to proteins introduced intradermally is greater than that produced by any other route except intravenously.

Once a diagnosis has been made establishing the degree of involvement of an infected individual, it is not necessary to make a complement fixation test every week, but we have done this to control our work more accurately. Once in two or three weeks should suffice.

Whenever it is possible it seems advisable to follow the suggestion of Wishengrad, namely, to give 0.1 c.c. of filtrate every other day. If at

any time the local tissue reaction is over two inches, the repeated injections might be delayed one day. If it is not possible to see a given case but once a week, commence with 0.1 c.c. and increase the dose cautiously each week. Never increase the size of the dose if the preceding one has caused a cutaneous response larger than two inches. In chronic infections where weekly treatments are given, it is permissible to start

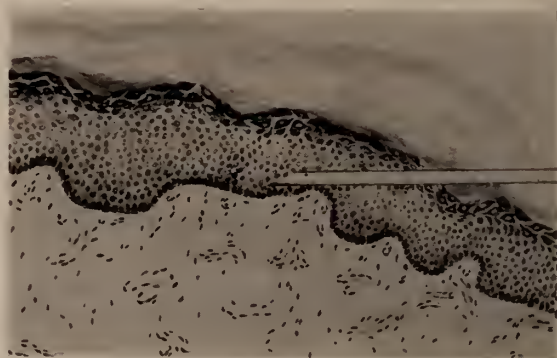


Fig. 2. Note rich vascularity of true skin.

with a larger dose, 0.2 c.c. When the size of the dose has been increased gradually to 0.3 c.c., negative serological results can be obtained if the dose is not further increased.

As the size of the dose is increased and the general immunity is acquired, the complement fixation test will become first one plus, then two plus, later to four plus. Gradually it will return in like fashion to a negative. Nevertheless, there may still remain a discharge with threads in the urine. If a given patient has been followed carefully, he needs no further immunization for at least four weeks as by this time his symptoms should clear up entirely. If at any time the complement fixation test turns from a one plus or two plus positive to a negative test, stop injections and await clinical symptoms for two weeks. Where there is any possible suspicion of prostatic or even posterior involvement, gentle massage should be given once a week. Notwithstanding the fact that the clinical symptoms have subsided, a continued positive complement fixation test means that the patient is not cured and that there may be trouble ahead.

Chronic infections due to other organisms and occasionally psoriasis may provoke a false positive response.

Local Treatment. No local treatment or medication of any kind is given except sedatives

where indicated. The use of haliver oil with viosterol is substituted for the old time balsam medication.

The ingestion of five to seven glasses of water a day is imperative.

Good drainage must be provided for by the wearing of a gonorrheal bag, also a suitable suspensory to avoid epididymitis.

The fact that the patient is under this type of management does not lessen the dangers of overactivity while the disease is being treated. I have found the following prescription of value as a urinary sedative.

R

Codeinæ sulphatis	0.25
Tincture hyoscyami	15.00
Syrupi gaultheriæ	30.00
Aquæ gaultheriæ q.s.ad.....	120.00

M. et Sig: One teaspoonful in water q. 4-6 hours.

This standardization of treatment is particularly adapted to dispensary practice for the following reasons: (1) The patients report for treatment but once a week; (2) no local treatment whatsoever is given, consequently it entails less expenditure and is convenient for both patient and physician; (3) complications are reduced to a minimum.

CASE REPORTS

We have treated in our private practice from January, 1937, to January, 1938, thirty cases: two females and twenty-eight males. The shortest time a patient was able to obtain a clinical as well as a serological cure was eight weeks, and the longest sixteen weeks. Two patients have maintained a positive complement fixation test in spite of a clinical cure. In this group of cases, the youngest was twenty-eight years of age and the oldest fifty-five years. As would be expected, younger individuals acquire their immunity faster than those of advanced years.

At the Evanston Social Hygiene Clinic, there

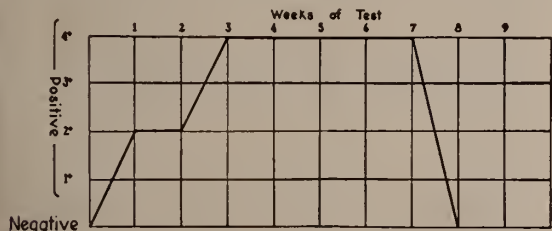


Fig. 3. Age, 28 years. Duration of treatment, 8 weeks. Shortest case under treatment: injection every other day.

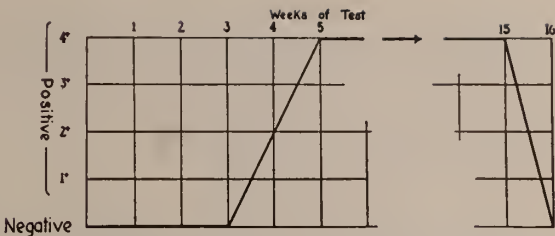


Fig. 4. Age, 55 years. Duration of treatment, 16 weeks. Longest case under treatment: injections once a week.

have been treated from July, 1937, to April 30, 1938, fifty-six cases. Forty-two obtained a clinical cure. Twenty-seven patients in this group still had positive serological findings. We believe this lack of correlation was due to the fact that these patients, after disappearance of their clinical symptoms, did not report regularly to the clinic for further check-up.

The total number of cases treated, both private and clinic patients, is eighty-six.

There have been two complications: one case of epididymitis in both clinical and private practice.

SUMMARY

Systemic invasion is a common occurrence in Neisserian infections and is often accompanied by serious or even fatal complications. If not detected and eradicated early, it may lie dormant for years before revealing its destructive pathologic changes. A positive complement fixation test means that the gonococcus (antigen) has extended past local barriers. In none of the methods that are accepted as standard for treatment is there a positive method of ascertaining when a patient is cured. The use of the "beer test," the passage of sounds, and the application of silver nitrate appear somewhat old-fashioned and at best only empiric.

CONCLUSIONS

1. Clinical observation leads to the importance of treating the gonococcus as a systemic infection rather than merely a local invasion.
2. The necessity of absolute eradication and positive proof thereof must be recognized.
3. The American Neisserian Society recommends in part the following in the management of gonococcal infections: "To avoid any procedure which in itself damages tissue and thus retards recovery or causes complications. To remember that there are no short cuts to the cure of gonorrhea,"

4. With the serobiological management by means of the bouillon filtrate, one is occasionally surprised at the rapidity of a cure. But the final eradication of the infection is often a prolonged and meticulous procedure.

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DISCUSSION

Dr. B. C. Corbus, Jr., Chicago: I would like to mention the experience I have had with 12 cases of gonorrheal arthritis on the Urological Service of the Cook County Hospital. They all complained of symptoms of 12 to 18 months' duration, with chronic joints and feeling very badly. We put them to bed and started them on intravenous therapy, beginning with 2/20 each time and increasing the dose 1/20 each week. These patients had violent rigors and elevation of temperature and showed marked improvement locally and generally after each injection. The average stay in the hospital varied between eight and ten weeks per case.

Dr. Corbus, in closing: It is our plan to treat these patients until they are not only clinically well, but to continue treatment until they are serologically negative. We are just starting to use the complement fixation test both as a guide to treatment and also as a diagnostic test. In this paper there is a complete bibliography of the complement fixation test as reviewed in the literature for the last eight years. There is enough evidence from very good men all over the world to make us recognize the value of this test. We treat our cases until they are clinically well and we go on and treat them until they are serologically well also, because we believe that unless a patient is serologically cured as well as clinically well, there may be trouble ahead. We were not familiar with the fact until recently that the average individual with simple gonorrhea, after the third week, according to many serologists, will many times show a positive complement fixation test.

Sulfanilamide is a splendid drug but one does not know positively when a given patient is well. Because

the discharge clears and the urine has no threads in it does not mean that the patient is well, as often you will find the mucus from the urethra loaded with gonococci and no pus.

It seems to me that the rational method of treating this disease is by way of the blood stream because many of these infections, if not already systemic, later become so.

EXPERIMENTAL AND CLINICAL STUDIES ON THE RELATION OF STREPTOCOCCI TO VARIOUS DISEASES*

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Your president suggested that I present on this occasion a review of my work on streptococci. In doing so, I propose to emphasize especially the results of those studies on which much of the work, seemingly unrelated, rests.** Most important among these are the following: the transmutation of pneumococci and streptococci; transfer of the virulence to nonvirulent pneumococci by soaking them in sterile extracts of highly virulent pneumococci (virulin); the experimental production of "anaphylatoxin" and a relatively nontoxic antigen useful in the treatment of lobar pneumonia by autolysis of pneumococci and the sensitization cross-wise of guinea-pigs to suspensions of pneumococci and streptococci; the changes which occur in localizing power in animals of organisms of the pneumococcus-streptococcus group as virulence decreases from cultivation on artificial mediums and as it increases on successive passage through animals; the studies on focal infection and elective localization; and the studies with Jensen on electrophoresis of streptococci.

MUTATION OF PNEUMOCOCCI AND STREPTOCOCCI

It was found very early that when pneumococci were grown under unfavorable conditions (stress and strain), such as in mediums with increased oxygen tension, in hypertonic and hypotonic broth, on blood-agar slants allowed to evaporate,

and in symbiosis with *Bacillus subtilis*, changes in cultural characteristics, morphology and serologic properties occurred. In short, they lost type specificity, virulence, capsule, bile solubility, inulin-fermenting power, and other properties characteristic of pneumococci, and they acquired the morphology, cultural features, serologic reactions, virulence and other properties of certain strains of green-producing and hemolytic streptococci. The changes were shown to be complete, according to all tests known, including the Marmorek test. Every important change was checked and repeated in order to rule out all possibility of contamination. Since the changes were often abrupt and the newly acquired properties tended to persist, the changes observed were considered to be true mutations. For the reverse change, that of streptococci into pneumococci, passage through animals was necessary. Every possible precaution was taken in these experiments to avoid accidental contamination. The changes observed occurred in orderly sequence in the course of numerous experiments. The pure line requirement was fulfilled. For these reasons the changes observed were considered to have been induced. It was concluded that mutations in this group of organisms could occur and that these were of great importance as a cause in the rise and fall of epidemic and other diseases, that precise classification in this group was not possible, and that the disease-producing power of the organisms was far more important than their fermenting and other properties. These conclusions have since been fully justified by the many corroborative studies of others on dissociation of pneumococci and streptococci, and in my own studies more or less continually since this work was first reported and recently, under strictly controlled conditions, by a serial dilution method. Figures 1 and 2 a, b, c, show how completely one strain of hemolytic streptococcus was converted serologically and morphologically into encapsulated pneumococci.

Changes in virulence and localizing power of streptococci. It was during the experiments on mutation that the discovery was made that as organisms lose or gain virulence, their affinity for different tissues or organs changes. Thus, ulcer of the stomach was not observed in the course of any of thirteen passages through rabbits of a streptococcus that had been cultivated for a long time, whereas in six additional pass-

*Address delivered at a joint meeting of the Tri-State Hospital Assembly and the Society of Illinois Bacteriologists, May 6, 1938, Chicago.

**References to my own work and that of others are given in connection with papers published in the Dental Cosmos, July, 1934; in International Clinics, vol. 2, series 40, 1930 (J. B. Lippincott Company); and in Verhandlungen der deutschen Gesellschaft für innere Medizin, XLII. Kongress, Wiesbaden, 1930.

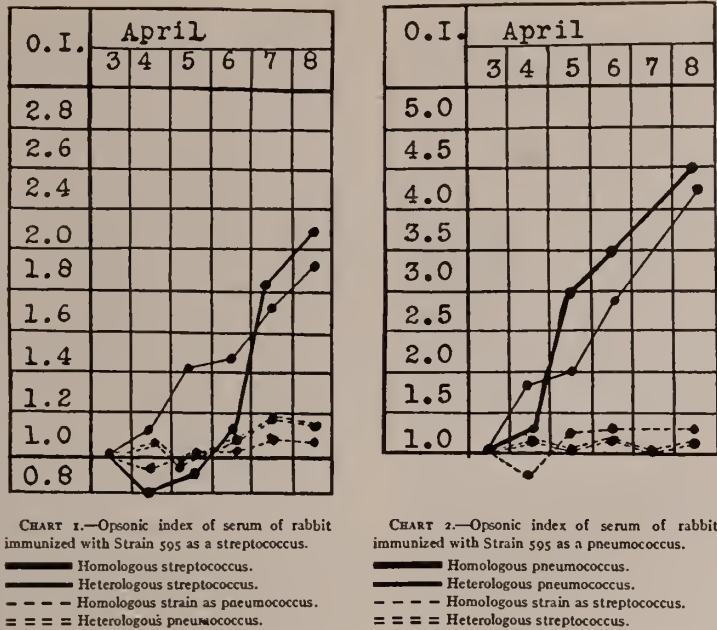


Fig. 1. Graphs showing serologic specificity of one strain as a streptococcus and as a pneumococcus.

ages ulcer was found in three instances. A strain of a pneumococcus that had lost almost all virulence and that had acquired the properties of a *Streptococcus viridans* was passed successively through twenty rabbits. During fifteen passages ulcer was not produced but in the next five passages ulcer of the stomach was found in two animals. The strains of streptococci obtained in studies of rheumatic fever produced ulcer of the stomach in two of sixteen animals in the first animal passage, in seven of eighteen animals after from two to five passages, and in only one of eight animals in from six to ten passages. Iritis, or other lesions of the eye, to cite the results with just one of a series of strains, was not observed in the course of any of eighteen successive passages through rabbits of a pneumococcus which had long since lost virulence, but the conditions occurred in all animals which were given injection in the nineteenth and twentieth passages. In subsequent passages, again, lesions of the eye were not obtained. If the lesions in the eyes really depended on a certain degree of virulence of the streptococcus, then the associated lesions in other organs should have been similar following like injection of the different strains. This was found to be the case. Thus, of forty-five animals that had lesions of the eye, twenty-eight had arthritis; five, hemorrhages in the appendix; eight, ulcer of the stomach; ten,

lesions of the endocardium; eight, lesions of the pericardium; nineteen, lesions of muscles or fascia, and twelve, lesions of the kidneys. The incidence of these associated lesions in animals corresponded roughly to those which are commonly found in examination of patients. From these and similar experiments it was concluded that different diseases may be attributable to originally the same strain having acquired peculiar virulence and other properties, depending on environment or other conditions.

ELECTIVE LOCALIZATION OF STREPTOCOCCI

The results of experiments on animal passage suggested that the bacteria, predominantly streptococci, in chronic, low-grade, often symptomless,

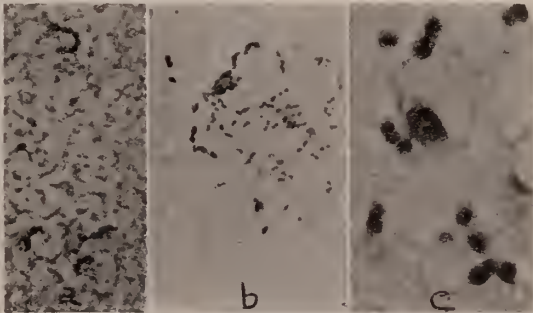


Fig. 2. Characteristic morphology of one strain (a) as a hemolytic streptococcus; (b) as a *Streptococcus viridans*; (c) as an encapsulated pneumococcus. (Gram stain, x1000.)

foci of infection (such as those in tonsils, teeth, sinuses, prostate gland and uterine cervix), although of low general virulence, might have high specific virulence, and that infections of low grade in symptomless foci predispose to disease, as was so thoroughly emphasized by the late Frank Billings and others. The studies on focal infection and elective localization made by myself and coworkers, by Haden, Jones and Newsom, and many others, have fully borne out these basic principles, well illustrated in table 1. The results recorded in table 1 represent a summary of repeated studies. The technic was essentially alike throughout. The variable was the disease under study.

In order to meet the objection raised against injection of relatively large doses of cultures in these experiments, I have injected directly suspensions in salt solution of the small amount of material that could be expressed from infected tonsils and prostate glands, or that could be aspirated from pyorrheal pockets, and have obtained extremely specific effects with organisms

grown in vivo, effects similar to those following injection of cultures. Experimental proof of the importance of one type of chronic focus of infection, that about pulpless teeth, was obtained with dogs whose teeth were infected with streptococci obtained in studies of different diseases. Specific localization, with reproduction of several disease-entities, occurred in a series of dogs; this is well illustrated in table 2. Jones and Newsom have had similar results in heart disease. From these and the experiments on intravenous injection, it was concluded that foci of infection afford favorable conditions for growth and entrance of organisms and their toxic products and for organisms to acquire specific localizing power.

In studies of streptococci isolated from foci or from involved tissues of patients who had various diseases, changes in localizing power, brought about by cultivation on artificial mediums and by successive animal passage occurred; these changes were similar to those induced in saprophytized strains and occurred regardless of the original source of the streptococci. Thus, local-

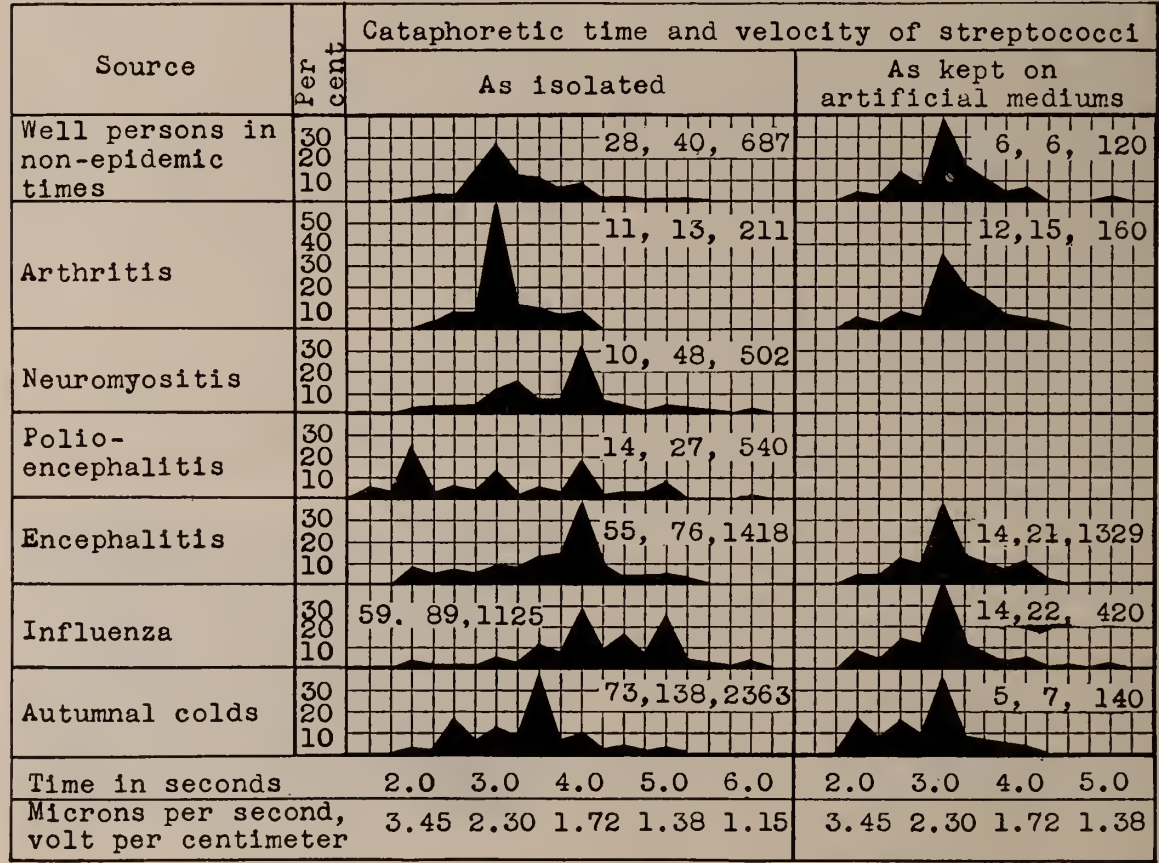


Fig. 3. Distribution curves of cataphoretic time and velocity of streptococci obtained from patients having various diseases, as isolated in dextrose-brain broth and after prolonged cultivation on artificial mediums.

ization resulting in grossly visible lesions of the appendix occurred in 68 per cent of rabbits which received injections of streptococci as isolated from foci and appendixes of patients who had acute appendicitis, whereas after cultivation of these strains for only a short time the incidence dropped to 18 per cent and after animal passage to 45 per cent. Similarly, in herpes zoster, ulcer of the stomach, cholecystitis and erythema nodosum, the high incidence of specific lesions in animals that received injections of the respective streptococci as isolated from foci and involved tissues became much lower after cultivation and after animal passage.

It has been emphasized repeatedly that lesions of the lungs almost never occur following intravenous injection of pneumococci or streptococci of low virulence, when lesions of joints, eyes, muscles and stomach occur, but they do occur commonly following injection of highly virulent strains when affinity for joints, eyes, and so forth, has been lost. Thus, lesions of the lungs almost never occurred following injection of *Streptococcus viridans* as isolated in cases of subacute bacterial endocarditis, but were commonly observed after these strains had lost affinity for the endocardium and had acquired high virulence and other properties of pneumococci from many successive passages through animals. Likewise, streptococci from patients who had ulcer of the stomach, cholecystitis, rheumatic fever, and erythema nodosum failed to produce lesions in the lungs on isolation and after cultivation,

whereas after animal passage lesions occurred in the lungs of animals which received injection.

It has been shown that filtrates of actively growing cultures and the heat or formalin-killed bacteria from strains of streptococci having specific or elective localizing power produced, on intravenous injection, lesions in the same tissues or organs as did the corresponding living culture, and that with loss of elective localizing power of the living streptococci the specific toxin was no longer demonstrable in filtrates and in the dead streptococci. In other words, elective localization of bacteria occurs for the same basic reason that specific localization or action of certain drugs and chemicals occurs.

It has been found, recently, that intracerebral injection of living streptococci or of the corresponding dead bacteria and filtrates of active cultures sufficed to cause systemic lesions more or less characteristic of the disease under study. The systemic localization of the living streptococci, the dead organisms and the filtrates in a series of experiments in myasthenia gravis, encephalitis and ulcer of the stomach or duodenum, are summarized in table 3. The incidence of lesions in the tissues of animals corresponding to those involved in the respective diseases was much higher than in the other tissues or organs. Intracerebral injection of streptococci or pneumococci isolated from the nasopharynx or sputum of persons suffering from respiratory infections, such as colds, sore throat, influenza, bronchopneumonia and bronchial asthma, was followed

TABLE 1. ELECTIVE LOCALIZATION OF STREPTOCOCCI AS ISOLATED IN VARIOUS DISEASES—SUMMARY OF RESULTS

Disease Groups		Percentage of animals showing lesions in:												
		Strains	Animals injected	Appendix	Stomach, duodenum, or both	Gall-bladder	Joints	Muscles	Nerves	Kidneys	Skin	Endocardium	Myocardium	Eyes
Appendicitis	85	222	60	10	1	22.7	7.7	0	0	2.7	0	19	5.4	1
Gastro-duodenal ulcer	354	1539	2	65	6.6	8.8	1.9	0.6	4.5	0.6	5	1.4	0.6	0.6
Cholecystitis	56	177	0	32	45	9.6	5.6	0	6.8	1.7	6.8	5	0	4.5
Chronic ulcerative colitis	206	527	0	0.8	0.6	1.3	0.4	0	0.8	0	1.3	0	0	58*
Rheumatic fever	24	71	8.5	41	2.8	66	26.8	0	39.4	5.6	46.5	43.7	9.9	4
Erythema nodosum	9	53	0	3.8	0	18.9	32	0	7.6	60.4	9.4	0	1.9	1.9
Chronic arthritis	723	1477	0.6	7.9	2	52.8	11.9	0.4	8.3	0.4	5.5	0.7	0.4	2.3
Myositis	192	891	0.5	13.7	2.2	29.3	72	8.7	9.2	3.4	10.3	14.5	1.0	0.5
Neuritis	24	124	3	5	1.6	12	32	65	9.7	0	4.9	9.7	0	13.7
Nephritis	17	64	0	4.7	1.6	9.4	11	0	59.4	0	3	4.7	0	0
Pyelonephritis	50	168	0.6	6.5	1.8	11.9	9.5	0.6	73	0	4.8	4	0	3
Herpes zoster	29	115	5	21	9.6	13	14.8	0	4.4	60	3.5	3.5	9.6	15.7
Endocarditis	29	109	0	6.4	1.8	17.4	2.8	0	11.9	0.9	76	9	0	11
Iridocyclitis	87	272	0.4	2.2	0.8	5.2	3.3	1	2.6	0.8	2.9	0	41.6	2.6
Controls	534	1329	2.3	14.2	4.5	18.4	13.5	2.9	8.7	2.8	10.6	6.4	0.8	5.2

*Colon.

in a large series of tests by severe congestion of the mucous membrane of the trachea and bronchi, hemorrhagic edema of lungs and bronchopneumonia. The lesions in the lungs often resembled those regularly at hand, or which occur as complications, in these respective diseases.

THE RELATION OF FOCI OF INFECTION AND
STREPTOCOCCI TO HYPERSENSITIVENESS
AND ALLERGY

Recent experimental and clinical studies indicate that allergy or sensitization plays an important rôle in the production of symptoms and lesions, especially in chronic disease. In my studies evidence has been obtained to show that sensitization is often related specifically to chronic foci of infection and to streptococci having elective localizing and necrotizing power.

Many years ago it was found that when suspensions of pneumococci and certain strains of streptococci and other bacteria were incubated under ether a highly toxic substance (anaphylatoxin) was formed, which, on injection into guinea-pigs and dogs, produced essentially the same symptoms and other changes (anaphylaxis) which occur in sensitized animals on reinjection of the sensitizing substance. A similar toxic substance was demonstrated in material from infected tonsils, in the exudate of pneumonic lungs and in suspensions of pneumococci and leukocytes. In certain acute streptococcal infections, notably in acute influenzal pneumonia with expanded chest and emphysematous lungs, unusually large amounts of "anaphylatoxin" having ominous import have been demonstrated. Moreover, it was shown that the formation of this highly toxic substance and its later disappearance in vitro was associated with proteolysis, but which

did not destroy specific antigenicity, and that the highly toxic substance prevented phagocytosis and formation of antibodies. The soluble extracts, after toxicity had disappeared, and the partially autolyzed pneumococci were highly antigenic and so nontoxic that it was possible to give patients injections of amounts one thousand times as great as of the unautolyzed material without causing untoward reaction. It was thought that since large numbers of partially autolyzed pneumococci were found in the lung exudate in lobar pneumonia at the time of crisis, the injection of large doses of the partially autolyzed pneumococci might supply the conditions necessary (specific carbohydrates conjugated to the detoxified pneumococcus protein, perhaps) for crisis to occur in the early stages in this disease. Extensive clinical studies have shown that this is often possible. A highly useful antigen, partially autolyzed pneumococci, now widely used in the treatment of lobar pneumonia, resulted.

Patients who had chronic infectious arthritis, chronic or recurring iritis, iridocyclitis and uveitis, neurofibromyositis, and especially myasthenia gravis, often have been found to be extremely sensitive to specific streptococcal vaccines. Exacerbations of symptoms occur chiefly in the structures chronically involved. The injection, often of exceedingly small doses, of killed organisms (one one-hundredth to one ten-thousandth of the usual amounts) which did not effect perceptibly well persons, caused exacerbations in persons who had these or other chronic diseases. Moreover, it has been found in many cases that by giving the specific streptococcal vaccines in sufficiently small doses, desensitization, as with pollens, was accomplished with concomitant clinical improvement.

TABLE 2. ELECTIVE LOCALIZATION OF STREPTOCOCCI FOLLOWING INOCULATION INTO THE TEETH OF DOGS

			Dogs that developed lesions in:				
Diseases	Number of strains	Number of dogs	Urinary tract (Calculi)	Stomach	Colon	Joints	Other organs
Nephrolithiasis	9	34	25 (75%)	0	0	0	0
Alkaline phosphatic cystitis.....	2	5	3 (60%)	0	0	0	0
Ulcer of stomach.....	3	20	0	13 (65%)	0	0	0
Chronic ulcerative colitis.....	15	15	0	0	7 (47%)	0	0
Chronic arthritis	16	40	0	0	0	0	0
Miscellaneous (Cholecystitis, iritis, encephalitis, spas- modic torticollis chronic poliomyelitis, goiter, abor- tion, et cetera)	23	38	5 (13%)	0	0	0	0
Control group—dogs whose teeth were not inoculated..	..	1014	51 (5%)	6 (0.6%)	0	0	0

THE RELATION OF STREPTOCOCCI TO DISEASES OF THE NERVOUS SYSTEM

In the studies on elective localization examples of extremely specific effects often were noted. This was especially true in the studies on herpes zoster, supposedly a virus disease, and according to Campbell and Head a form of acute posterior poliomyelitis. Herpes of the skin and lesions of corresponding ganglions occurred following intravenous injection, sometimes of extremely small numbers of streptococci. Owing to these and other similar results the idea occurred to me that a streptococcus having highly specific properties might have etiologic significance in acute anterior poliomyelitis, regardless of the fact that the cause of this disease had been shown to be a filtrable virus. Opportunity to test this hypothesis was first afforded during the epidemic of 1916. A pleomorphic, green-producing streptococcus which produced flaccid paralysis as the outstanding effect in rabbits and guinea-pigs was isolated consistently from the nasopharynx and emulsions of spinal cord of a series of patients ill with, or who had died from, typical epidemic poliomyelitis. The streptococcus was demonstrated in or adjacent to the lesions in the spinal cord and has since been isolated consistently from atria of infection and spinal fluid in life and from the spinal cords of patients who had died from epidemic or sporadic poliomyelitis. By the use of dextrose-brain broth and other favorable mediums this streptococcus has been isolated consistently also from the spinal fluid and spinal cords of many monkeys that have developed typical poliomyelitis following inoculation of different strains of the virus. Pleomorphic strepto-

cocci have been demonstrated in the lesions in monkeys and in filtrates of active virus by the use of special staining methods. I can mention here only a few of the proofs which indicate etiologic significance of the streptococcus in poliomyelitis and encephalitis. References and detailed results will be found in the original papers.

Thus far it has not been possible, by means of the streptococcus, to reproduce consistently in the monkey typical poliomyelitis such as occurs following inoculation of virus. However, by the use of a medium consisting of infantile tissue in which acid is not produced by growth of streptococci (autoclaved chick-mash) I have succeeded recently in making transmissible, filtrable virus from the streptococcus far removed from the original source, and even from streptococci having "neurotropic" properties but isolated from sources other than patients who had poliomyelitis. The experimentally produced virus strains resist glycerolation for a long time (a year or more) as does natural virus.

Likewise streptococci have been isolated in studies of encephalitis and allied diseases of the nervous system. With these streptococci the main symptoms of the respective diseases have been reproduced in animals and a virus phase also has been developed. The results of these and other experiments indicate that acute epidemic poliomyelitis and encephalitis are primary streptococcal infections and that as these occur a "virus" phase of the streptococcus develops.

CATAPHORESIS OF STREPTOCOCCI

At the suggestion of, and with the assistance of, your president, L. B. Jensen, a study of the electrical state of streptococci having elective lo-

TABLE 3. INCIDENCE OF LESIONS PRODUCED IN ANIMALS BY INTRACEREBRAL INJECTION OF LIVING AND HEAT-KILLED STREPTOCOCCI AND FILTRATES OF CULTURES

								Incidence of lesions, per cent								
Streptococci from patients with:	Material injected	Number of strains	Animals injected	Mortality, per cent	Joints	Muscles	Nerves	Stomach or duodenum		Gallbladder	Kidneys	Thymus	Lymph nodes	Lungs	Myocardium	Endocardium
								H*	U**							
Myasthenia gravis	Live streptococci	28	57	87	0	49	10	5	0	0	2	5	0	10	0	4
	Dead streptococci	4	5	60	0	60	20	0	0	0	0	0	0	0	0	0
	Filtrate	8	9	25	0	55	11	0	0	0	0	0	0	0	0	0
Encephalitis and allied diseases	Live streptococci	12	33	73	3	6	0	6	3	0	0	0	0	12	0	3
	Dead streptococci	7	8	38	0	14	0	0	0	0	0	0	0	0	0	0
	Filtrate	6	6	33	0	0	0	0	0	0	0	0	0	0	0	0
Ulcer of stomach or duodenum	Live streptococci	14	17	41	0	6	0	82	47	0	0	0	6	17	0	0
	Dead streptococci	3	5	20	0	0	0	60	40	0	0	0	0	0	0	0
	Filtrate	5	7	53	0	0	0	71	28	0	0	0	0	14	0	0
Normal controls	Live streptococci	7	7	28	14	14	0	0	0	0	0	0	0	0	0	0
	Filtrate	5	7	53	0	0	0	71	28	0	0	0	0	14	0	0

*H—hemorrhage; **U—ulcer.

calizing power was undertaken. In a series of experiments, reported in the literature, it was found that the distribution curves of cataphoretic velocity of streptococci as isolated in studies of different diseases were characteristic, that they often paralleled elective localizing power, that characteristic cataphoretic velocity and localizing power often disappeared simultaneously and that the medium, dextrose-brain broth, found so useful for isolation of causative streptococci, was especially favorable for studies of cataphoresis. The average distribution curves of cataphoretic velocity of the streptococci, as isolated and after prolonged cultivation on artificial mediums, are given in figure 3; the streptococci were obtained in studies of several disease-entities and from well controls. The difference between the strains as isolated from patients who had different diseases is striking, yet all, on prolonged artificial cultivation, became like those from the throats of well persons. From these experiments it is concluded that the poor results obtained from the use of vaccines for the prevention and treatment of disease is owing largely to the fact that the vaccines usually are prepared from strains of organisms that have lost specific antigenic properties from prolonged growth on artificial mediums.

SEROLOGIC PROOF OF SPECIFICITY OF STREPTOCOCCI

Owing to the great variability of streptococci, the prompt loss of specific properties on artificial cultivation, their tendency to agglutinate spon-

aneously as grown on the usual mediums, and the use of inadequate methods of agglutination with the serums of patients, little evidence has been obtained to indicate causal relationship of streptococci to chronic disease. In a large measure these difficulties have been overcome by the use of dextrose-brain broth for the primary isolation, by growing the streptococci for purposes of agglutination in this medium or in dextrose broth for one culture generation and by preserving the centrifuged streptococci in dense suspension in glycerol (2 parts) and 25 per cent. solution of sodium chloride (1 part). One cubic centimeter of this menstruum was made to contain the growth of from 50 to 500 c.c. of the culture. The antigens for agglutination were prepared by diluting the suspension in glycerol-salt solution to the density of a broth culture with salt solution to which 0.2 per cent. phenol was added. The patient's serum was likewise diluted in salt solution to which 0.2 per cent. phenol was added, to one-half the desired dilution and then 0.2 c.c. of suspension and serum dilutions were mixed and placed at 50°C. for from eighteen to twenty-four hours, when readings were made. Highly specific results were obtained with many, but not with all, of the serums obtained from patients who had chronic disease.

The streptococci isolated, grown and preserved in the manner indicated were found highly satisfactory also for the demonstration of specific cataphoretic slowing action (antibody-antigen reaction) of the respective serums from patients who had chronic infections of low grade, for the

TABLE 4. PRECIPITATION REACTION WITH THE SERUM OF PATIENTS AND THE SERUM OF HORSES HYPERIMMUNIZED WITH STREPTOCOCCI

Source of serums (antigens)	Cases studied	Percentage of positive reactions with: Antiserums prepared with streptococci from:					Control	
		Encephalitis	Poliomyelitis	Chronic ulcerative colitis	Myasthenia gravis	Chronic infectious arthritis	serums	
						Pneumococcus, I, II, III	Normal horse	
Encephalitis	55	78	31	40	45	64	0	0
Spasmodic torticollis	12	75	41	41	25	58	0	13
Chronic poliomyelitis	20	50	60	30	25	35	0	5
Acute } Human beings	28	46	64	4	17	18	0	7
poliomyelitis } Monkeys	9	55	89	44	33	33	0	0
Neuritis, herpes, hiccup.....	12	92	8	33	17	42	0	0
Epidemic gastro-enteritis	51	67	33	90	60	45	0	0
Myasthenia gravis	8	63	25	38	88	75	0	13
Neurofibromyositis	24	63	29	41	33	83	0	13
Asthmatic bronchitis	16	68	25	37	31	37	0	0
Chronic infectious arthritis.....	12	50	8	8	8	67	0	0
Iritis	11	27	9	9	0	45	0	0
Normal controls	48	8	0	6	2	10	0	0

preparation of hyperimmune serums in horses and for agglutination experiments with these antisera. Moreover, the antisera prepared in this way caused precipitation (antibody-antigen reaction), often specifically, when overlaid in small precipitin tubes with cleared washings in salt solution of nasopharyngeal swabbings or with the serum of patients. The results summarized in table 4 show how very specific this reaction was with the serums from the respective patients. The demonstration by the precipitation test of the common presence of streptococcal antigen in the serums of patients who had chronic disease that was antigenically related to the streptococcus with which the reacting serum was prepared is new and, from the standpoint of pathogenesis and specific therapy, is of great importance.

It was found that intradermal injections of the euglobulin fraction of the antiserum prepared in horses, in the manner indicated, elicited an immediate (ten minutes) erythematous-edematous reaction in patients suffering from a streptococcal disease identical to, or closely related to, the one in studies of which the immunizing strain of streptococcus was isolated. This test is an application to streptococcal diseases of the Foshay antigen-antibody reaction, first noted in relation to tularemia. It serves to determine whether a patient is suffering from a streptococcal infec-

tion; if so, of what particular type and what antiserum or stock vaccine had best be used therapeutically. The results recorded in table 5 well illustrate how specific the test is as applied in different diseases.

STREPTOCOCCAL VACCINES AND ANTISERUMS

The results from the use of streptococcal vaccines have been extensive and especially favorable in the prevention and treatment of epidemic colds and influenza, bronchial asthma and other respiratory infections. The respective vaccines and antisera prepared in the way indicated have been shown to have value in the treatment of ulcerative colitis, ulcer of the stomach, arthritis, neurofibromyositis, and in about a third of cases of different forms of chronic encephalitis, spasmodic torticollis, multiple sclerosis and chronic poliomyelitis. Prevention of exacerbations and arrest or retardation of the disease, with only relatively slight improvement in symptoms, is all that can be hoped for in those cases in which irreversible changes have occurred. The encephalitis antistreptococcus serum or, to be more definite, the particular antiserum which elicits the immediate cutaneous erythematous reaction, often has been found to have striking curative effects in acute encephalitis and in epidemic persistent hiccough, even if the hiccough has occurred following operation. The immune

TABLE 5. ERYTHEMATOUS REACTIONS TO INTRADERMAL INJECTION OF THE EUGLOBULIN FRACTION OF ANTISTREPTOCOCCAL SERUMS

Source of serums (antigens)	Persons tested	Average reactions (sq. cm.) to:										Control serums	
		Euglobulins prepared with streptococci from:										Pneumococcus I, II, III	Normal horse
		Chronic Encephalitis	Acute*	Typical Polio-myelitis	Los Angeles	Chronic ulcerative colitis	Ulcer of stomach or duodenum	Myasthenia gravis	Chronic infectious arthritis	Iritis	Pyelonephritis		
Encephalitis	92	6	5	3	3	3	..	2	3	..	0	1	0
Spasmodic torticollis	30	5	4	4	4	1	2	4	5	..	..	1	1
Hiccup	10	10	8	4	..	1	..	1	2	..	..	1	1
Anytrophic lateral sclerosis.....	19	4	5	5	8	..	..	5	1	..	..	..	0
Chronic poliomyelitis	27	3	2	8	8	6	..	3	2	..	..	1	0
Optic or peripheral neuritis.....	17	8	7	7	..	..	..	3	4	..	..	1	0
Chronic ulcerative colitis.....	13	5	..	..	3	10	4	..	5	..	2	1	1
Epidemic gastro-enteritis	69	3	..	..	..	12	3	2	5	..	1	2	1
Ulcer of stomach.....	39	5	3	4	5	10	11	..	4	..	2	0	0
Neuromyositis and fibrositis.....	35	5	5	6	5	4	2	3	9	3	3	0	0
Rheumatic arthritis, neuromyositis and carditis.....	28	5	5	5	..	4	..	..	9	1	..	2	0
Myasthenia gravis	19	4	2	2	..	1	..	11	3	..	..	1	1
Chronic infectious arthritis.....	42	3	3	0	3	3	3	1	8	..	2	2	0
Osteitis deformans	10	3	2	..	1	..	..	1	8	..	..	..	0
Iritis	12	6	..	1	..	5	..	..	14	11	..	4	1
Pyelonephritis	19	1	8	1	..	5	2	..	3	..	9	3	0
Diseases not due to streptococci.....	33	0	0	1	..	1	0	0	1	..	1	0	0
Well persons	32	1	..	1	..	1	1	0	1	..	..	1	1

*St. Louis type.

serum prepared with the streptococcus obtained in studies of acute poliomyelitis has been shown to have curative action, especially in the early stages of many cases of poliomyelitis, during every epidemic since 1917 in which it was used. In recent studies it has been found that intradermal injection of this serum causes an immediate erythematous antigen-antibody reaction in the prepoliomyelitic, or infective, stage and throughout the attack in acute poliomyelitis. The therapeutic injection of the serum in this early stage causes the cutaneous reactivity, fever and other symptoms to disappear promptly, without injury to the nervous system. Intradermal injection of the poliomyelitis antistreptococcus serum in cases of chronic poliomyelitis nearly always elicits an immediate reaction and in some of these cases intramuscular injection of from 2 to 3 c.c. twice weekly seems to arrest the disease.

The studies on the relation of streptococci to various diseases and on methods for the preparation of relatively nontoxic vaccines and specific antisera and for their use in prevention and treatment, indicate that the following simple procedures will suffice in most instances for isolation of specific or causative streptococci and for preparation of useful vaccines and sera.

Material is swabbed from high in the nasopharynx, without touching the tongue, by the use of cotton-wrapped swabs of aluminum wire bent to a suitable angle. Pus is expressed and scooped from the depths of tonsils by means of a small laryngeal mirror (1.5 cm. in diameter) bent to an angle of about 45 degrees. The exudate from the depths of pyorrheal pockets is aspirated into capillary pipets, also bent to a suitable angle. Pulpless teeth are extracted under sterile precautions and cultures are made from the apical ends after they have been cut off with bone-cutting forceps. Swabbings are made from the uterine cervix under aseptic precautions. Material expressed from the prostate gland is collected in sterile tubes but before the material is expressed the anterior urethra is irrigated with sodium chloride solution and the meatus is sterilized. With the aid of the proctoscope swabbings are made from rectal ulcers in cases of ulcerative colitis. Tissues are removed under sterile precautions and are emulsified in salt solution in sterile air chambers or bacteriologic hoods. Sputum and extirpated tonsils are washed in salt

solution before cultures are made. Cultures from these and other materials are made routinely on the surface of blood-agar plates for the detection of aerobes. Since specific streptococci from closed foci, such as those at the apices of teeth, and since the specific strains from open foci mixed with saprophytes or saprophytic variants of specific strains require a reduced oxygen tension for growth, cultures are also made in deep tubes of dextrose-brain broth and soft dextrose-brain agar. The media were prepared from dehydrated broth or meat extract and peptone in the usual concentrations, to which 0.2 per cent. dextrose and 0.1 per cent. decolorized fuchsin (Andrade's indicator) (and in the case of agar, 0.25 per cent. agar) were added. The reaction was adjusted to pH 7.0. Approximately 18 c.c. of the media were placed in tall tubes (20 x 1.5 cm.) and to each tube two or three pieces of fresh calf brain, a total of about 3 c.c. in volume, were added before autoclaving (20 pounds for twenty minutes). The inoculated mediums are incubated at 35° C. overnight. If the primary dextrose-brain broth and dextrose-brain agar tubes are free from gas, and if smears disclose the presence of a pure culture of large streptococci of uniform size, in short chains, or a great preponderance of streptococci, the culture may be considered satisfactory for the preparation of an autogenous vaccine. The supernatant growth is centrifuged and the sediment suspended in the glycerol-salt solution. The growth from 15 c.c. of broth is suspended in about 0.1 c.c. of the menstruum. Larger amounts of sediment are made more concentrated. The longer these strains are kept in the glycerol-salt solution the less toxic the vaccine is and for this reason stock vaccines often are more useful than autogenous vaccines. These stock vaccines can be prepared by pooling suspensions that may remain after autogenous vaccines have been prepared for individual cases.

Autogenous vaccines are made by diluting the glycerol-salt solution suspension in sodium chloride solution to the density of a dextrose-brain broth culture (approximately 2 billion organisms per cubic centimeter) and heating the diluted suspension at 70 or 75°C. for an hour. Tests for sterility are then made in dextrose-brain broth and 0.2 per cent phenol is added to the suspension. In the preparation of many thousands of vaccines, heated to 70 or 75°C. for an hour, growth of streptococci never has been

obtained. In most diseases such as ulcer of the stomach, chronic sinusitis, encephalitis, spasmodic torticollis, chronic poliomyelitis, amyotrophic lateral sclerosis and multiple sclerosis, the respective vaccines are used undiluted, or diluted 1 to 10 in salt solution to which 0.2 per cent. phenol was added. For cases of chronic infectious arthritis, iritis and other diseases of the eye, chronic myositis, dermatomyositis, neurofibromyositis and bronchial asthma, the vaccines are diluted routinely 1 to 100, and for cases of myasthenia gravis, 1 to 1,000 or as high as 1 to 100,000. Routinely, for adults 0.1 c.c. is injected subcutaneously for the first dose. It is important that all vaccines be injected immediately beneath the skin, preferably in the relatively insensitive area of the arm between biceps and triceps. If an untoward reaction does not occur the dose is increased by 0.1 c.c. twice weekly until 1 c.c. is reached, when 1 c.c. is given weekly for an indefinite period, depending on results obtained. The reaction of the patient, however, should be the chief guide to dosage rather than the prescribed schedule. The aim should be to keep the dose small enough that increased tolerance to the vaccine is obtained. If this is accomplished clinical improvement usually occurs. If tolerance is not increased, or if sensitivity to the vaccine is increased and improvement does not occur, the dose, regardless of the amount in cubic centimeters, may be considered to be too large and should be reduced even a hundred or a thousand fold, if need be, and then gradually increased. If a given dose is followed by favorable results, this dose may be repeated a number of times before the amount is increased. Subcutaneous lumps should be avoided. Their occurrence is indicative of increasing sensitivity instead of increased tolerance.

For immunization of horses and preparation of most stock vaccines, only those strains of streptococci which produce more or less characteristic symptoms and lesions in animals are used. The streptococci from cultures injected and the streptococci isolated from the characteristic lesions produced are grown in dextrose-brain broth, and then for one culture generation in large volumes of 0.2 per cent. dextrose-broth. The growth from the dextrose-broth is harvested by a continuous-feed centrifuge and this is suspended in the glycerol-salt solution menstruum

so that 1 c.c. represents the growth of from 500 to 1,000 c.c. of broth culture. These dense suspensions are then diluted as needed at intervals throughout the period of immunization of horses, and for administration to patients they are diluted to the density of the broth culture. Both are usually heated from 70 to 75° C. for an hour, as in the case of autogenous vaccines.

COMMENT

A summary of many studies made by special methods, on the relation of streptococci to various epidemic and other diseases is reported. The importance of the use of mediums, such as dextrose-brain broth, which afford a gradient of oxygen tension and other favorable conditions for the primary isolation and subsequent cultivation of the streptococcus, and the changes or mutations which tend to occur on cultivation on artificial mediums and on animal passage, are emphasized. Experimental evidence is cited indicating the importance of foci of infection and of the streptococcus having elective localizing power in rendering the involved tissues of patients hypersensitive or allergic to streptococci and their toxic products.

Streptococci having elective localizing power and characteristic cataphoretic velocity and other specific properties have been demonstrated repeatedly in foci of infection and elsewhere over a period of years (carrier state) in patients suffering from various chronic diseases such as arthritis and encephalitis. This indicates that the patients' tissues or tissue fluids afford the conditions favorable for streptococci to acquire and maintain specific properties peculiar to the disease in question. Constitutional predisposition to disease may be due, in part, to a peculiar interrelation between host and parasite, such as this, and not wholly to inherited "weakness" of certain organs or tissues, as is generally believed.

The etiologic relationship of streptococci has been shown by their constant presence in different diseases, by the production of characteristic symptoms and lesions in animals, by cataphoresis, by specific agglutination and precipitation tests and by the intradermal injection of specific antisera. Methods for the preparation and use of highly specific antisera and highly specific, yet relatively nontoxic, vaccines are described.

My close association with the late Frank Bil-

lings, with Hektoen and with clinicians of The Mayo Clinic has been most helpful in understanding the nature of the problems involved and in interpretation of experimental results obtained throughout now these many years of study.

THE DIAGNOSTIC VALUE OF STERNAL MARROW ASPIRATIONS

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With increasing knowledge in the field of hematology it becomes more evident that a complete blood study should include a study of the bone marrow. The blood picture does not always accurately reflect the underlying pathologic process that exists in the blood forming organs. Conditions presenting anemia may be associated with a hypoplasia or hyperplasia of erythropoiesis; leukopenic states with a hypoplastic or hyperplastic granulopoietic tissue and diseases associated with thrombocytopenia may show a normal or increased number of megakaryocytes in the bone marrow. In an attempt to find a method that was simple, practical and at the same time informative from a clinical point of view, those in general use in the examination of bone marrow were studied and will be discussed. For sake of brevity the methods to be discussed are as follows:

Bone marrow sections.

Bone marrow smears.

Imprint or "Abklatsch" preparations of bone marrow.

Serum suspension of "emulsion" of bone marrow cells.

Sternal marrow aspiration.

Methods in general use.

Concentration of bone marrow cells.

1. Technique for making differential bone marrow counts.
2. Technique for making "tissue" appearance preparations.

Supravital staining of bone marrow cells.

I. *An Evaluation of the Methods in Use in the Study of Bone Marrow.*

Bone Marrow Sections. This method has been

described in detail by Custer. Briefly it consists in the removal (by means of a trephine) of a small plug of bone from the midsternum in the region of the fourth intercostal space. This is immediately placed in Zenker's solution containing five per cent. glacial acetic acid sufficient for decalcification. The sections after fixation are prepared in the usual way with paraffin and stained with eosin-azure or Giemsa. They are excellent for showing the relative distribution of cells. They do not however, demonstrate delicate cellular morphology and thus do not yield accurate differential counts. The method requires a surgical "set-up" and repetition of the procedure is limited. Scars result from the operation and this is of esthetic importance for women and children.

Bone Marrow Smears. The cavity resulting from the removal of the plug of bone is carefully scraped with a fine curette, bits of bone being removed which are then gently smeared on glass slides. The smears are stained either with Wright's stain or with Giemsa stain. Although this method gives beautiful preparations, the disadvantage is that a bone marrow biopsy is required.

Imprint or "Abklatsch" Preparation of Bone Marrow. Bits of bone obtained by biopsy serve as minute serial preparations. The fresh surface of the marrow is gently touched to a slide or cover glass without pressure and dried rapidly by "whipping" through the air. These are stained with Wright's or Giemsa stain (Pappenheim's Modification) except that a double concentration of Giemsa stain as recommended by Ferrata is used. Eight or more imprints are made on one slide or cover glass (these are mounted in Xylol-balsam) and the peripheral portion of each is suitable for examination. This method is ideal for study because it approaches the spread of a bone marrow section while retaining the fine cellular morphology as seen in a bone marrow smear. This method is also limited because of the surgical procedure.

Serum Suspension or "Emulsion" of Bone Marrow Cells. Fresh bone marrow or bits of bone marrow scraped from the cavity after the removal of the small plug of bone is mixed with serum until a thick emulsion is formed. Cover-glass films are made from this material and stained with Wright's or Giemsa stain. According to Isaacs the principle of the technique de-

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depends upon the fact that the blood serum dissolves the intercellular connective tissue substance, liberating the individual cells, and changing them chemically so that they stain like cells of the blood stream. The disadvantage is that a trephine is required, and the number of serial observations that may be made on the same individual is limited.

Sternal Marrow Aspiration. The technique in general use is as follows: With the patient lying on his back the region over the sternomanubral junction including the area down to the fourth intercostal space in the midsternum is prepared with iodine and alcohol. The sternomanubral junction or the upper border of the third rib in the midline, preferable the latter is the best sight for puncture. An 18-gauge spinal needle which has been shortened to two to three inches is inserted at an angle of 45 degrees, with the point directed toward the head of the patient, into the marrow cavity. Entrance into the marrow cavity is recognized by a "sudden" give (comparable to the "feeling" when one has entered the spinal canal when doing a spinal puncture) of the needle. This indicates that the outer table (anterior lamina of the sternum) has been perforated. A tight-fitting dry syringe (2, 5, 10 or 20 c.c.) is attached to the needle after the stylet has been removed and from 0.1 c.c. to 2.0 c.c. of marrow is withdrawn. In infants and young children the anterior lamina is cartilaginous and no difficulty is experienced in entering the marrow space. In fact the tendency is to force the needle in too deeply. When suction is applied and no marrow is aspirated, the needle should be slowly withdrawn until the bone marrow material appears in the syringe. Usually if a successful sample of bone marrow has been obtained a more or less dense suspension of small tissue particles will be visible. If 0.1 c.c. or 0.2 c.c. of marrow has been removed, fixed, supravital films, nucleated cells and megakaryocyte counts are made immediately. The remaining material is permitted to coagulate and form a small fibrin clot, which is then fixed in formalin, embedded, sectioned and stained as any other tissue. Young and Osgood aspirate 1 or 2 c.c. of marrow and discharge this material into a tube containing 2 to 4 mg. of powdered potassium oxalate and make complete hematologic examinations from oxalated bone marrow.

Reich, by means of a special constructed needle

which must be driven into the sternum, aspirates 10 c.c. of bloody fluid. This material is mixed with 2 c.c. of 1.4% sodium oxalate solution, centrifuged and smears are made of the buffy coat. The fixed smears are stained in the usual way. Vogel, in some of his bone marrow studies, aspirated 2 c.c. of marrow fluid and placed this material in a sterile tube containing one drop of 30% sodium citrate. The citrated marrow fluid is then placed in a Wintrobe tube and centrifuged for five to ten minutes. After a relative accurate red cell volume, white cell volume and platelet volume is determined, the white cell layer is removed with a capillary pipette, mixed to insure uniformity and smears made. The distortion of cellular morphology brought about by oxalated bone marrow is one of the disadvantages of this method.

Concentration of Bone Marrow Cells. 1. The patient is prepared as for sternal aspiration.



Chart I. Apparatus for Sternal Aspiration, Concentration and Study of Bone Marrow Cells.

S. N., sternal needle; T., paraffin-lined tube containing heparin; P., paraffin-lined pipettes; H., hematocrit (Wintrobe) tube; W., paraffin-lined watch glasses; S₁, 18x22 mm. rectangular coverglass; S₂, standard microslide.

The type of needle used is one devised by Klima and Rosegger* modified for a Luer syringe attachment and thus an adapter as required for the original needle is not necessary. A five c.c. syringe is attached to the needle after

*In obese individuals it may be necessary to remove the "guard" from the sternal needle before attempting to enter the sternum.

it has been inserted and the piston of the syringe is rapidly and partially withdrawn and held firmly until the marrow appears. One c.c. of bone marrow and not more is withdrawn and discharged into a paraffin-lined tube containing a small amount of heparin. When this amount of marrow is aspirated practically all patients complain of a sudden temporary "suction" pain. The tube is gently inserted several times and by means of a paraffin-lined pipette (old type Wintrobe pipette with the large bore) the 1 c.c. of bone marrow is placed in a Wintrobe hematocrit tube and centrifuged for exactly five minutes at high speed. After centrifugation the volume

Chart 2.
Concentration of Bone Marrow Aspiration

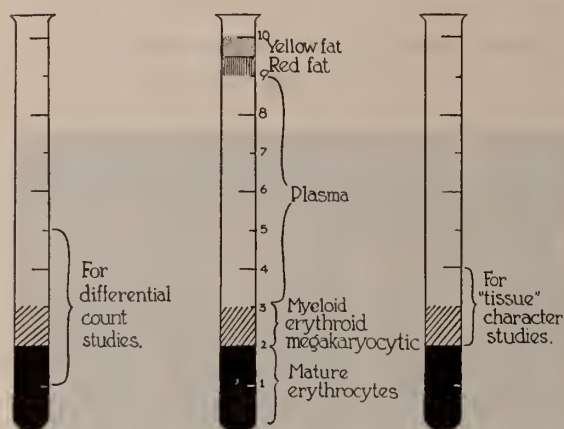


Chart II. Methods of Studying Bone Marrow Cells by Concentration Technique.

of the different layers is recorded. The fat layer which may be seen at the top of the tube in most cases is first removed. The height of the myeloid-erythroid layer in the hematocrit is determined and an equal volume of red cells is marked on the tube, then the supernatant plasma is drawn off with a pipette, until the plasma volume is equal to the combined myeloid-erythroid and erythrocyte layers. With a paraffin-lined pipette, the plasma, myeloid-erythroid and erythrocyte layers are withdrawn, discharged into a paraffin-lined watch glass and thoroughly mixed. A small drop is transferred to a slightly warm microslide and with a 18x22 mm. rectangular coverglass (same thickness as the counting chamber coverglass) a margin free smear is made. After the marrow preparation has been air-dried by whipping through the air, it is ready for staining.

This method is essentially the same as used by

Schleicher and Sharp. Erythrocytes and myeloid-erythroid layer in a ratio of 1:1 is adopted as an arbitrary standard. This technique is ideal for differential studies of bone marrow cells.

2. For making "tissue" appearance preparations, a volume of plasma equal to the column of myeloid-erythroid cells in the hematocrit tube is withdrawn, discharged into a paraffin-lined watch glass, thoroughly mixed and smears made from this mixture as described above. Other hematological studies such as supravital films, nucleated cells and megakaryocyte counts can be made from the material as described for either of these two methods. The smears are treated with Wright's stain or May-Grünwald Giemsa. When Wright's stain is used, allow the stain to act for one minute then dilute with as much distilled water as the slide will hold, mixing very thoroughly. Allow this to stand 15-20 minutes, then wash with distilled water and air-dry. May-Grünwald-Giemsa technique is as follows: The slide is placed into (A) 0.3% alcoholic May-Grünwald solution* for three minutes. (B) Without washing, place slide into a freshly made-up dilute May-Grünwald solution for one minute (May-Grünwald solution and distilled water equal parts). (C) The slide is then removed and placed on a staining rack covered with 3 c.c. of dilute Giemsa solution (Giemsa stock solution one drop plus distilled water one cubic centimeter) for five minutes. (D) Finally, rinse with distilled water until the water returns clear while tilting the slide, then place in a vertical position and allow to air-dry. If this procedure is followed there will be obtained clear and well-tinted smears. This has been true in over 1500 preparations stained according to this method. Smears made according to this technique give bone marrow patterns comparable to those seen in bone marrow sections—thus they are called "tissue-like" preparations. Using the oil-immersion objective a differential count may be performed. This is simplified by the use of an ocular which contains a Whipple grid to divide

*One hundred cubic centimeters of absolute methyl alcohol are warmed to 50 degrees C. To the warm alcohol is added, in minute portions, 0.3 gm. of May-Grünwald dye powder. After each addition of the dye the solution is shaken vigorously, when solution is complete, allow to stand for twenty-four hours, filter into a brown or blue bottle and store in a cool place. The dilute solution used in staining should be replaced daily. (In hot weather the diluted stain may deteriorate in two to three hours.) It is very important to keep the dye and buffer solutions cool.

the field into segments. At least 95% or more of all cells are identifiable in a well-made preparation. According to this method deviations from the normal bone-marrow pattern can be readily learned. The concentration technique has the advantage over other methods of sternal aspiration in that "myeloid-erythroid" hypoplasia or hyperplasia may be relatively accurately measured. Thus quantitative changes (hematocrit) as well as qualitative findings (differential count of bone marrow cells) may be correlated. This method has been found to be of value in pernicious anemia, aplastic anemias, leukemias, leukopenic conditions, etc.

Composition of layers in the Hematocrit Tube (Chart II). The erythrocyte layer consists of mature red blood cells, most of which are derived from the bone marrow sinusoids. The separation of these cells which would otherwise cause a dilution of the myeloid elements is another advantage of the concentration method.

The "Myeloid-Erythroid" layer or Bone Marrow Cell Layer is made up of the erythropoietic series (normoblasts, erythroblasts, etc.), leukopoietic system (mature and young neutrophils; metamyelocytes, myelocytes, promyelocytes, myeloblasts, etc.) and the megakaryocytic tissue. Lymphocytes, monocytes and a few of the mature polymorphonuclear neutrophils are present because of unavoidable sinusoidal dilution.

The Fat Layers consist of a pure yellow fat and a red fat. The red fat is formed by meshed bone marrow cells which have been caught when the fat particles move to the top of the hematocrit following centrifugation. Fat may interfere with the proper staining of bone marrow cells and its separation is another advantage of this method. It also gives a relative accurate estimation of the amount of fat in the bone marrow and is of value in the study of certain diseases.

A few diseases in which hypoplasia and hyperplasia of the bone marrow is seen is illustrated in Chart III. This gross quantitative finding is represented by the "Myeloid-erythroid" volume.

Supravital Staining of Bone Marrow Cells. Bone marrow cells (using any of the methods described) are brought in contact with a dye combination consisting of neutral red and Janus Green which has been previously prepared on a clean slide. By this method one studies cells that are alive and physiologically active. It has the disadvantage in that the preparations are not

permanent and the finer cytologic structure of the nucleus, which is not stained by these dyes (when the nucleus takes on the stain, the cell is dead) cannot be studied.

Bone Marrow Culture. This method of studying bone marrow cells is still in the experimental stage and is too impractical for routine work.
II. Clinical Pictures Studied.

Bone marrow aspirations were performed in 350 individuals including normal men and women using the concentration method which has been described above. In many cases two or more aspirations were done. The individuals ranged in age from six weeks to seventy-nine years. All material was taken from living patients. Accurate cytological identification is difficult in postmortem material and the changes become more pronounced the longer after death one waits to study bone marrow cells. Heparin was used as the anticoagulant. It is ideal. Oxalates bring about cellular distortion (especially the nucleus) and this may account for the number of unclassified cells recorded by some workers. The conditions studied ranged from anemia to polycythemia; leukopenia to leukemia (counts as high as 800,000 per cu.mm); thrombocytopenia to thrombocytosis, as well as cases presenting lymphadenopathy, splenomegaly, purpura etc. Since this paper deals chiefly with the diagnostic value of sternal marrow aspirations, other hematological studies which were performed on all cases, such as hemoglobin determinations, erythrocytes, leukocytes, platelet and reticulocyte counts, differentials, sedimentation rates (Wintrobe tube) hematocrit determinations and the calculation of the Wintrobe indices etc., have been omitted.

Normal Bone Marrow. The normal differential bone marrow cell count varies depending upon the investigator, the method used, the number of cells counted, the fields selected and the criterion used for cellular classification. The following figures represent the approximate cellular constituents found in the normal marrow according to the technique described.

White blood cells: (Myeloid)	
Mature neutrophils	= 10-25%
Neutrophilic metamyelocytes	= 20-45%
Neutrophilic myelocytes	= 15-20%
Pre-myelocytes and myeloblasts.....	= 2-5%
Eosinophiles (all types).....	= 2-5%
Basophiles are present, but rare.....	= less 0.5%
Red blood cells: (Erythroid)	
Normoblasts	= 75%
Erythroblasts	= 20%
Pro-erythroblasts	= less than 5%

Ratio of white cells to nucleated red cells (myeloid-erythroid ratio) 1.75:1.00 to 3.5:1.

Megakaryocytes mostly adult type are seen scattered throughout the smear (they tend to accumulate at the end of the preparations). The presence of most lymphocytes and monocytes is due to an unavoidable dilution with sinusoidal blood. Plasma cells, histocytes, reticulum cells and a few cells that cannot be classified are seen in all preparations. (Fig. 1, No. 1 and No. 2). Megaloblasts, the type seen in pernicious anemia during a relapse, were never seen in normal bone marrow.

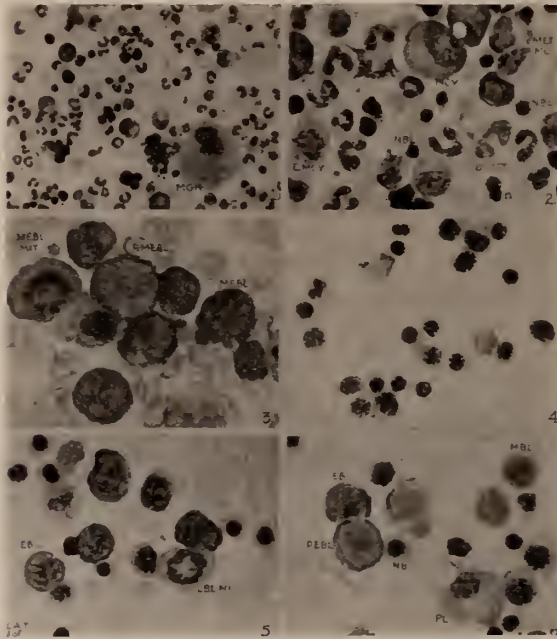


Fig. 1. May-Grünwald-Giemsa stain. Photomicrographs—Magnification x900 except No. 1 (Magnification x500).

1. Normal bone marrow. A typical field showing the Erythroid—Myeloid—Megakaryocytic spread. MGK, adult megakaryocyte.

2. Normal bone marrow. MCY, myelocyte (neutrophilic); MET MCY, two metamyelocytes (neutrophilic); B MET, band form metamyelocyte (neutrophilic); E MCY, eosinophilic metamyelocyte; NBL, normoblast.

3. Megaloblastic cells from a case of pernicious anemia during a severe relapse. PMEBL, promegaloblast; MEBL, megaloblast; MEBL MIT, megaloblast in mitosis.

4. Normoblastic reaction 24 hours following liver therapy in a case of pernicious anemia (compare with No. 3, from the same patient before treatment).

5. A case of coeliac disease with a macrocytic anemic showing the Erythroblastic—Normoblastic activity in the bone marrow. EBL, erythroblast; EBL Mit, erythroblast in mitosis.

6. Bone marrow acholuric jaundice (congenital or acquired type). PEBL, pro-erythroblast; EBL, erythroblast; MBL, macronormoblast; NBL, normoblast; PL, plasma cell.

Pernicious Anemia and other Macrocytic Anemias. The bone marrow in pernicious anemia during a severe relapse consists mostly of a marked proliferation of erythropoietic cells of the megaloblastic series. The characteristics of these cells are illustrated in Fig. 1, No. 3. When the erythrocyte count is 2,500,000 per cubic millimeter or less and at times at a level of 3,500,000 per cubic millimeter, the presence of megaloblasts in the bone marrow is diagnostic of pernicious anemia. This only holds true in untreated cases. Complications such as cancer, syphilis, diabetes mellitus, nephritis, hypothyroidism etc., does not disturb this characteristic bone marrow pattern. A certain amount of myeloid hyperplasia (leukopoiesis) is seen in the bone marrow in all cases and the megakaryocytes are reduced in number. Between 24-48 hours following specific therapy the bone marrow becomes normoblastic in character. (Fig. 1, No. 4). Thus sternal puncture can be used as a criterion for the effectiveness of a liver preparation days before the peripheral blood shows signs of regeneration.

The bone marrow in this disease was followed prior to treatment and every day following liver therapy until the maximum reticulocyte count was reached and then at each million increase in red count. It is only in this manner that rapid and significant changes can be detected. The maturation effect of liver involves not only the erythroid cells, but also the myeloid elements and megakaryocytes which is reflected in the peripheral blood by an increase in the number of platelets as well as the white count. As the erythrocytes approach 4,500,000 to 5,000,000 per cubic millimeter the bone marrow becomes less diagnostic qualitatively, although quantitatively (hematocrit) it may be still hyperplastic.

It cannot be too strongly emphasized that the only criteria of adequate treatment in pernicious anemia is one based on cell size (mean corpuscular volume or Price-Jones Curve) or bone marrow examination (qualitative or quantitative determinations). Clinically a patient with this disease with a red count of 4.5 millions per cubic millimeter may feel well, yet hematologically he may be carrying a macrocytic cell. Such an individual requires more treatment with anti-pernicious anemia material.

The macrocytic anemia that occasionally occurs in cirrhosis of the liver and other hepatic disease was usually associated with a erythroblastic

or normoblastic bone marrow and in some cases the myeloid elements predominated (leukopoiesis). In no case was a megoloblastic marrow seen.

In a case of coeliac disease in an infant the bone marrow was predominating erythroblastic and macro-normoblastic. (Figure 1, No. 5).

In pregnancy and in a few cases of primary aplastic anemia the marrow was normoblastic in character. In the latter disease there was a hyperplasia of the erythroid tissue at the normoblastic level. The total number of erythroblasts and normoblasts equals or exceeds the total number of white cells in the bone marrow differential count. Thus the normal myeloid-erythroid ratio 2.63:1 (average) becomes approximately 1:1.

In some cases of leukemia, especially the acute type, the hyperplasia is myeloid (leukopoiesis) in type and the macrocytic anemia is difficult to explain.

In carcinoma of the stomach with metastasis to the bone marrow in the presence of a severe macrocytic anemia sternal aspiration will immediately rule out pernicious anemia. Occasional cases of sickle-cell anemia, congenital and acquired hemolytic anemia, pellegra, nephritis, carcinomatosis of the bones, acute loss of blood, hepatomegaly of undetermined origin, leukosarcoma (lymphosarcoma cell leukemia) and malignant neutropenia should offer no difficulty in differentiating from pernicious anemia if the peripheral blood is correlated with the bone marrow findings.

Acholic Jaundice (Congenital or Acquired Type). The bone marrow was always hyperplastic at the normoblastic stage. (Figure 1, No. 6). Leukopoiesis was also involved as was shown by the increased number of granulocytes in the marrow. Following splenectomy there was an adjustment which was noted by a decrease in the number of normoblasts. Sternal aspirations in these cases allows a rapid differential diagnosis to be made in conditions presenting chronic jaundice.

Sickle-Cell Anemia. Whether the spleen was intact or had been previously removed the bone marrow showed similar findings. There was a marked hyperplasia of the erythropoietic tissue at the normoblastic stage (depending upon the activity of the disease) with immediate sickling of the red blood cells in the bone marrow as-

pirated material. This offers a rapid method of demonstrating sickling.

Hypochromic Anemias. The bone marrow in the microcytic hypochromic anemias showed a hyperplastic normoblastic reaction. Irrespective of the cause, whether it was due to chronic loss of blood (peptic ulcer, hemorrhoids, uterine bleeding, malignancy etc.) or the "idiopathic" type the bone marrow revealed the same findings, with one exception. This was in cases of carcinomatosis of the bones. Here the bone marrow contained carcinoma cells (?) or reticulum (?) or primitive cells (?). These cells were very fragile and remained in groups or clumps. In some of these cases the histocytes showed signs of phagocytic activity and the megakaryocytes were increased in number.

Leukemia. In the various types of leukemia bone marrow aspiration is mainly corroborative and usually mirrors the changes in the peripheral blood. The only exception is in cases of acute leukemia in a leukopenic phase (aleukemic). Here the bone marrow is overrun by large numbers of "blast" cells with an almost complete disappearance of nucleated red cells and megakaryocytes. This is the triad—anemia, leukopenia and thrombopenia. Such cases may be wrongly diagnosed Banti's disease, pernicious anemia, "purpura hemorrhagica" or agranulocytosis. It is in the differential diagnosis of these conditions that the importance of sternal marrow aspiration has shown its value.

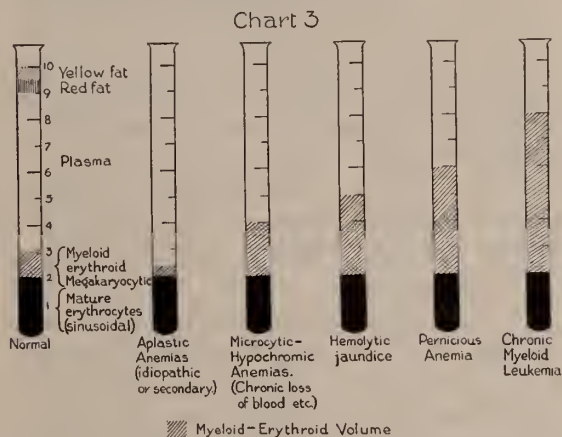


Chart III. This diagram illustrates a few diseases in which hypoplasia and hyperplasia of the bone marrow is seen. These gross quantitative findings are represented by the myeloid-erythroid volume in the hematocrit tubes.

In chart III it will be noted that in the aplastic anemias the volume of functioning bone mar-

row cells is decreased. This is represented by the myeloid-erythroid volume in the hematocrit tube, (1.5-3.0% compared with the normal of 5-8%). On the other hand the total number of nucleated red cells in the differential bone marrow cell count is equal to the combined number of white cells. Thus the normal white to red cell ratio 2.62:1 (average) becomes approximately 1:1. This is a hyperplasia of the erythroid tissue at the normoblastic level, although the total amount (volume) of functioning marrow is reduced. The anemia in the idiopathic type does not respond to any form of therapy and blood transfusions are of temporary use.

In the microcytic hypochromic anemias there is a myeloid-erythroid hyperplasia (20% or more) predominatingly erythroblastic-normoblastic in type. The peripheral blood reveals a small red blood cell (microcytic) with a decrease in the amount of hemoglobin in the average erythrocyte (hypochromic). The bone marrow despite the anemia is hyperplastic, the red blood cells being unable to mature properly unless large doses of iron are given. Chronic loss of blood with its loss of iron (peptic ulcers, malignancies etc.) is usually responsible for this iron deficiency anemia. Following the replacement of iron therapeutically the hyperplasia in the bone marrow returns to normal and the red blood cells become normal in size and in hemoglobin content.

The marked hyperplasia (the myeloid erythroid volume in the hematocrit may be as high as 30%) in the hemolytic anemias is secondary to increased blood destruction. This takes place within the body and the principle products of the red cell (hemoglobin with its iron) are retained. The accelerated erythroid activity in the bone marrow in one case (acholuric jaundice) decreases upon the removal of the spleen and in another when the hemolytic agent is removed (sulfanilamide etc.).

The hyperplasia in pernicious anemia is due to a proliferation of megaloblastic cells. (The myeloid-erythroid volume may be as much as 40% of the hematocrit tube). These cells required some form of anti-pernicious anemia principle for their maturation and probably for their suppression in order that the normal erythroid tissue may function. This is reflected in the peripheral blood by a decrease in the average red cell volume from 100 cubic microns or more

(macrocytic) to an average red cell volume of 86 cubic microns (normocytic). The myeloid-erythroid volume then approaches normal.

In chronic myeloid leukemia there is an uncontrolled hyperplasia of the normal myeloid cells which is reflected in the peripheral blood by an increase in the leukocyte count. The myeloid-erythroid volume which consists mostly of proliferating white cells (myelocytes, myeloblasts etc.) interferes with the normal growth of red blood cells and usually of the megakaryocytes. (Myeloid-erythroid volumes as high as 75% have been found). Following treatment with x-ray the decrease in the white count is associated with a reduction in the amount of myeloid tissue in the bone marrow.

In a case of acute leukemia with a low white count in a child the marrow showed a normoblastic reaction and a slight reduction in the number of megakaryocytes, yet the granulopoietic tissue was practically replaced by "blast" and "lymphoid-like" cells. (Fig. 2. No. 2).

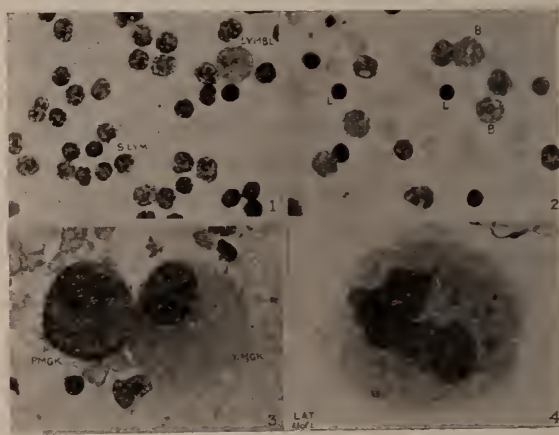


Fig. 2. May-Grünwald-Giemsa stain. Photomicrographs—Magnification x900.

1. Bone marrow in chronic lymphatic leukemia showing the normal marrow cells replaced by lymphocytes. S. L Y M, small lymphocytes; LYMBL, lymphoblast.
2. Bone marrow from a case of "aleukemic" leukemia in an infant. B, "blasts" cells; L, "lymphoid-like" cells (undifferentiated?). Compare these cells ("lymphoid") with those of Fig. 1, No. 4 (normoblasts) and with those of Fig. 2, No. 1 (small lymphocytes).
3. Megakaryocytes from a case of essential thrombocytopenic purpura. PMGK, promegakaryocyte; YM GK, young megakaryocyte.
4. Adult megakaryocyte from normal bone marrow.

Essential Thrombocytopenic Purpura. In patients with this disease, the examination of the bone marrow showed a normal or increased number of megakaryocytes, although the platelets were reduced or absent in the peripheral blood.

This finding in the bone marrow was similar during the active phase of the disease and during a temporary remission induced by blood transfusions. The predominating type of megakaryocytes seen is illustrated in Fig. 2, No. 3 (pro-megakaryocyte and young form). Compare these cells with the adult type seen in normal bone marrow (Fig. 2, No. 4).

It is in the differential of this disease from aplastic anemia, toxic processes etc., that the study of the bone marrow is essential before a diagnosis and any form of therapy can be suggested.

Lymphadenopathy and Splenomegaly. If the bone marrow findings are correlated with the peripheral blood studies many conditions presenting lymphadenopathy, splenomegaly or both may be diagnosed or definite disease processes ruled out.

Some cases of Hodgkin's diseases are associated with a myeloid hyperplasia, an increase in the number of plasma cells, histocytes and megakaryocytes. If repeated bone marrow studies reveal similar findings, this may prove of diagnostic importance.

DISCUSSION

At the beginning of this study bone marrow biopsy was resorted to in many conditions whether or not a hematologic problem presented itself. In several instances the biopsies were repeated. This method was soon discarded in favor of sternal marrow aspirations. Smears made of the aspirated material with few exceptions were found qualitatively to be nearly identical with those made from biopsies. The method is simple, harmless and less painful than a surgical biopsy. No training or special permission is required. The diagnosis is available immediately and repeated punctures may be readily and easily done. If the technique for the concentration of bone marrow is followed sternal aspiration will make the diagnosis in any case that biopsy does.

Loss of histological structure and admixture of sinusoidal blood with marrow cells are the disadvantages of sternal aspiration. These disadvantages are outweighed by the advantages of the technique of bone marrow concentration already discussed.

If one fails to aspirate marrow in one area because of the presence of fibrosis other points on the sternum should be tried. Also if the aspirated material is mostly sinusoidal in character

and contains very few bone marrow cells, the procedure should be repeated elsewhere on the sternum. Biopsy can always be done as the last resort.

It should be emphasized that sternal marrow aspiration is not a "solve all" procedure (this is also true of biopsies). Not all obscure hematology cases can be diagnosed by means of bone marrow study. Mistakes are inevitable. Accurate interpretation and diagnosis of disease processes is acquired through personal and continued experience with many varieties of conditions, both clinical and hematological. It is only in this way that a better understanding of the physiologic pathology of various disorders of the blood-forming organs can be approached.

CONCLUSIONS

1. All methods in general use in the study of bone marrow are reviewed. Their diagnostic value, indications and limitations are discussed.

2. The concentration technique of obtaining and studying bone marrow material is described in detail and its advantages over other methods in general use is considered.

3. 350 cases were studied. The bone marrow findings in a group of clinical conditions are briefly discussed and the diagnostic, prognostic, and corroborative value considered.

4. The ease with which sternal marrow may be obtained and the diagnostic and prognostic value that it offers suggests sternal puncture as a routine hematologic procedure.

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A SCARLET FEVER SURVEY

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Cultures of the nose and throat for hemolytic streptococci and Dick tests were made on all children admitted to The Children's Memorial Hospital during 1934 and 1935. Similar cultures were taken on all the personnel, and Dick tests were made before employment. Cultures were also taken and Dick tests performed on the whole hospital personnel at the beginning of the study. Cultures were repeated on the whole group on several occasions thereafter. Repeated cultures were often made on those individuals having a positive culture. Repeated Dick tests were done on groups of children with and without positive cultures. A record was kept as to whether the tonsils had been removed and as to whether a throat infection was present at the time of culture. When a case of scarlet fever occurred in a hospital patient all possible contacts were cultured. All cases of scarlet fever occurring in the city of Chicago were reviewed for the two years this study was in progress. An attempt was made to trace all secondary cases which occurred in a family after a primary case. All cultures were made of the nose and throat by the usual blood agar plate method.

CULTURES FOR HEMOLYTIC STREPTOCOCCI

In Table I are given the results of some of the culture surveys on hospital personnel and children resident in the hospital. Cultures were made on the personnel of a general hospital to serve as a control group with the children's hospital personnel group. The frequency of positive cultures was only three percent greater in the latter group than in the general hospital personnel group although scarlet fever and upper respiratory infections are more common in children than in adults. On all culture surveys of the children's hospital personnel the percentage of positive cultures remained constant with seasonal variations between 11.4% and 17.7%. Cultures of the personnel taken before employment were positive in only 4.2%. After employ-

*Deceased.

From the Otho S. A. Sprague Memorial Institute and The Children's Memorial Hospital. Read before Section on Public Health and Hygiene of Illinois State Medical Society, May 17, 1938, Springfield.

ment there was immediately an increase in the frequency of positive cultures to approximately 17%.

The culture survey made on the patients resident in the children's hospital in January of 1934 showed 44.5% having positive cultures. This was at a time when many sporadic cases of scarlet fever were occurring in the hospital in both patients and personnel. On many subsequent similar surveys the number with positive cultures was always about 25%. This is considerably higher than the number with positive cultures at the time of hospital admission which over a two-year period averaged 19.2%. This increase can undoubtedly be explained by the continuous contact between sick patients and personnel caring for the sick.

In Table I the results of culture on the same group of personnel and patients on successive days are also given. Approximately the same number of positive cultures was present on both days. But when the individuals with positive cultures are compared for each day it was found that from 50 to 70% were positive both days. For example, 196 of the personnel were cultured on both December 19 and 20, with 32 or 17%

Cultures insofar as possible were taken on the day of admission and never later than the following morning. There was practically no difference in the frequency of positive cultures for both years, the figures being 18.9% and 19.2%. The incidence of positive cultures by months is given in the last two columns of Table 2. In both years the latter half of the winter months and the spring months had the highest frequency. In the last column of Table 3 the incidence of positive cultures according to age is given. Positive cultures were less likely to be present in infants than in older children. There was a gradual increase up to the fourth year of age after which the incidence remained about the same. When the children of 3,700 families were grouped as to the number of members in each family, it was found that the size of the family had no influence upon the presence or absence of a positive culture. Children from large families were no more likely to have positive cultures than children from small families.

The relation of a positive culture to the presence or absence of the tonsils and adenoids and its relation to throat infections are given in Table 4. Information bearing on these points

TABLE 1. RESULTS OF NOSE AND THROAT CULTURES FOR HEMOLYTIC STREPTOCOCCI ON HOSPITAL PERSONNEL AND PATIENTS

Personnel general hospital											Personnel children hospital					Patients Children's hospital		
Identical Group											Identical Group*					Identical Group		
1934											1935					1934		
Dates	1934	1/7	1/24	1/25	1/24	7/20	1/17	1/18	12/19	12/20	1/7	9/3	9/4					
Number Cultured	150	133	133	383	306	323	194	186	186	124	115	115						
Positive Cultures	21	16	12	65	35	48	14	32	34	55	29	28						
Per Cent Positive.....	14%	12%	9.1%	17%	11.4%	14.9%	7%*	17%	17.7%	44.5%	25%	24%						

*Personnel cultured on 1/18/35 had all had negative cultures on 1/17/35.

and 34 or 17.7% positive respectively. Of those with positive cultures only 24 were positive both days while eight were positive the first day and negative the next, and ten were negative the first day but positive the second day. This same variation occurred when patients were cultured on successive days. From this it seems that too much reliance cannot be placed on a negative or positive culture on any one day when considering carriers of the hemolytic streptococcus.

Nose and throat cultures for hemolytic streptococci were taken on 4,151 children admitted as patients to The Children's Memorial Hospital during 1934, 1935 and the early months of 1936.

was obtained on 3,270 children who had cultures upon admission to the hospital. When a throat infection was present positive cultures were 6% more frequent in the non-tonsillectomized than in the tonsillectomized group. When no throat infection was present positive cultures were only 3% more frequent in the non-tonsillectomized group. It seems that the presence of tonsils and adenoids has a greater influence upon the presence of hemolytic streptococci in the nose and throat than the presence of a throat infection in children. Of a group of 832 children that were admitted for only tonsillectomy and adenoidectomy 24% had positive cultures which

emphasizes how little influence throat infections have upon the presence of positive hemolytic streptococcic cultures. But this does not seem to hold true for adults. 630 of the personnel had nose and throat cultures taken when they were ill with upper respiratory infections. A positive culture was present in 24% which is a definite increase over the 17% with positive cultures of the personnel when on duty.

Both the nose and throat were always cultured. The frequency of positive nose cultures and positive throat cultures is given in Table 4. The nose alone was positive in only 1.5% of the patients, the nose and throat together in only 3% and the throat alone in 14.5%. The nose seems to be of relatively little importance when carriers of hemolytic streptococci are being considered.

The frequency of positive cultures was increased in the nurses who cared for patients with contagious diseases. Before going on duty in the contagious unit of the hospital 14% of 92 nurses had positive cultures while at the end of that service 24% had positive cultures.

DICK TESTS

Dick tests were performed on 3,710 children admitted to the children's hospital. In the second to last column of Table III the frequency of positive Dick reactions in the various age groups is given. There was a gradual decrease in the number of positive Dick reactors from a high of 71% in the one-year age group to 28% in the 12-year-old group. While only 34% of the infants under one year of age had positive tests it was found that the Dick reaction was very unstable at this age, changing from negative to positive and vice-versa very frequently. Positive Dick reactions were 11% more frequent in non-tonsillectomized children than in children that had had their tonsils and adenoids removed. As stated previously, 3% fewer of the tonsillectomized children had nose and throat cultures positive for hemolytic streptococci than the non-tonsillectomized group. It would seem from this that the dictum of advising tonsillectomy at an early age to prevent scarlet fever is not sound.

859 children had a re-check of their Dick test within one year of the first test. Of those over two years of age in whom the original Dick reaction was negative 1% were found to have positive reactions upon the second test. When first

tested 181 children with positive Dick reactions also had nose and throat cultures positive for hemolytic streptococci. On the second Dick test 18.2% of these 181 children had become Dick negative. Of 429 children with a positive Dick test but with a negative culture when first tested, 11.9% became Dick negative on the second test. In the presence of a positive throat culture 6% more positive Dick reactors became negative than when a negative throat culture was present.

To determine whether the children of a large family were more likely to have a negative Dick reaction than those of a small family, the children of 3,729 families were grouped according to the number of members in each family. There was a definite gradual decrease in the number of positive Dick reactors with increase in family size. From a three-member family 54% of the patients had a positive Dick reaction which decreased to 32% for the families of more than ten members.

A history of scarlet fever within the preceding five years was obtained in 559 children. At the time of their scarlet fever 329 of the children were quarantined at home and 167 were removed to a contagious hospital. Of those quarantined at home 23% still had a positive Dick reaction and of those quarantined in a contagious hospital 13% were still Dick positive. When these children were divided into age groups, it was found that of those with a history of scarlet fever before the third year of age 48% of the home-quarantined group and 40% of the hospital-quarantined group still had positive Dick reactions as compared to 17% and 11% respectively of the children between three and twelve years of age. A higher number of children continued to have a positive Dick reaction after home quarantine than hospital quarantine which is undoubtedly due to a more liberal diagnosis in home cases. There is a fairly high incidence of failure of immunity as measured by the Dick test (after the disease). This is in contrast to most other contagious diseases.

That the information received from the interpretation of the Dick test is not always reliable seemed evident from the fact that eight cases of scarlet fever developed in individuals in whom the Dick reaction had been read as negative. Further, positive Dick reactions were present in

16 personnel, all of whom gave a history of a previously negative test.

SCARLET FEVER

From September, 1933 to June, 1936, scarlet fever was diagnosed in 76 patients and six of the personnel in the children's hospital. Four of the patients had a surgical scarlet fever with negative throat cultures but positive wound cultures. It was felt that 17 of the patients had the disease or had been infected before hospital admission. The other 59 patients and the six personnel developed the disease after hospitalization. In only 13 of these latter 65 cases could exposure or possible contact be traced to a case of scarlet fever. In other words, infection must have taken place from contact with patients or personnel with positive hemolytic streptococci cultures some of whom were carriers of scarlet fever strains. The control of scarlet fever in a hospital is a complex problem, because there is no simple method of differentiating a scarlet fever strain from other strains of the organism. 14% to 17% of the personnel always have positive cultures, while 12 to 30% of the children admitted to the hospital also have positive cultures. After residence in the hospital the incidence of positive cultures rises to 25% to 45%. Too, only 50% to 70% of the individuals with positive cultures are positive on successive days.

There were 245 children with some contact with 40 cases of scarlet fever in The Children's Memorial Hospital. Of these 245, positive Dick tests were present in 89. Scarlet fever developed in four of the 89 from this known exposure and in five more at a later date with no known exposure. 125 children with definite exposures to cases of scarlet fever were cultured at the time of exposure and 36% were found to have positive cultures. On admission only 19% of them had positive cultures.

The Chicago Health Department records of the reported cases of scarlet fever were studied for 1934 and 1935. During 1934 and until May of 1935 the quarantine period was three weeks and from this time on the period was raised to four weeks. In 1934 there were 9,453 cases of scarlet fever reported, in 1935 the number was 15,989, and in 1936 it decreased to 7,918 cases.

In Table 2 the monthly distribution of cases

is given. The winter and spring months consistently show the highest incidence of cases. With the establishment of the four-week quarantine period in May, 1935 there was a marked decrease in the frequency of the disease so that

TABLE 2. MONTHLY INCIDENCE OF SCARLET FEVER AND POSITIVE CULTURES

Month	1934		1935		1934	1935
	No. Cases	Per Cent	No. Cases	Per Cent	Pos. Cult.	Pos. Cult.
Jan.	915	9.7	1531	9.6	17.9	16.7
Feb.	1059	11.2	2176	13.6	24.1	21.9
March	1193	12.6	2842	17.8	25.6	30.3
April	1094	11.6	2930	18.3	24.9	27.7
May	1119	11.8	*2630	16.4	25.9	23.4
June	661	7.0	1480	9.3	18.1	26.2
July	228	2.4	341	2.1	16.9	12.3
Aug.	160	1.7	166	1.0	12.7	15.7
Sept.	318	3.4	209	1.3	11.0	13.4
Oct.	577	6.1	457	2.9	18.0	15.0
Nov.	923	9.8	720	4.5	17.5	12.5
Dec.	1193	12.6	505	3.2	17.3	16.7
	9453		15989			
					7918 in 1936	

*Four-week quarantine period starts.

there were fewer cases in 1936 than in 1934. It can be questioned whether the lengthening of the quarantine alone brought about a decrease in frequency of the disease. It is possible the epidemic itself was receding due to natural causes. The percentage of individuals with positive cultures and positive Dick tests remained the same during both years. Also, as will be shown later, the slight decrease of traceable secondary cases started before the quarantine period was increased. As can be seen in Table 2 the monthly incidence of cultures positive for hemolytic streptococci follows quite closely the monthly incidence of the disease. The frequency of positive cultures, though, does not decrease as much during the summer months as does the frequency of scarlet fever.

In Table 3 the age incidence of scarlet fever is given as well as the age incidence of positive Dick tests and positive cultures. Again, the curve of positive cultures follows to some extent the curve for scarlet fever except that there is not the sharp rise to the seventh year and the rapid fall thereafter as in scarlet fever. The age incidence of positive Dick tests in no way follows the age incidence of scarlet fever. This is undoubtedly due to the fewer possible contacts in the young age groups when susceptibility as measured by the Dick test is most frequently present.

When the number of days the patients were ill before a diagnosis of scarlet fever was reported to the Health Department was estimated, it was found that about 75% of the patients had

TABLE 3. INCIDENCE ACCORDING TO AGE

Age	Scarlet Fever Cases	Per Cent	% Pos. Dick	% Pos. Cult.
Under				
1 yr.	80	.3	34	11
1	361	1.4	71	15
2	1100	4.3	75	21
3	1515	6.0	69	17
4	1868	7.3	61	24
5	2293	9.0	54	24
6	3264	12.9	48	25
7	2961	11.6	41	26
8	2400	9.5	41	19
9	1790	7.0	32	24
10	1507	5.9	34	32
11	1128	4.4	27	20
12	917	3.6	28	18

TABLE 4. RELATION OF POSITIVE CULTURES IN PATIENTS TO TONSILLECTOMY

	Tonsils Present		Tonsils Removed	
	No.	Pos.	No.	Pos.
Patients with U. R. I.....	1002	23%	157	17%
Patients without U. R. I....	1845	20%	266	17%
832 patients admitted for tonsillectomy				
24% positive cultures				
Nose alone positive.....				1.5%
Nose and throat both positive.....				3.0%
Throat alone positive.....				14.5%

been ill for from three to five days, 25% being reported on the third day. From the record this meant that the physician had been called on that day. Because of this delay in diagnosis the other members of the household had ample time for exposure before quarantine could be established.

We designated as a primary case of scarlet fever the first case in the home and as secondary any subsequent case in that home which occurred within seven days of the last possible contact. This should serve in a rough way as a measure of the contagiousness of the disease and the infectivity of the infecting organism in relation to producing the disease. The secondary cases have been divided into the following groups depending upon the time of onset in relation to the primary case. In group I were placed all those secondary cases that developed before quarantine was established as well as those cases which developed within seven days after quarantine was supposed to have been established. The establishment of quarantine in

the home or the removal of the primary case to a contagious hospital would not affect the secondary cases placed in this group because exposure to the disease had already taken place. In Table V all the secondary cases in group I have been listed according to the day of onset as reckoned from the first possible day of exposure. The figures for 1934 and 1935 have been combined because they were so similar for both years and because the length of the quarantine period would not affect this group. Of the total cases reported for both years, 10.3% were secondary cases falling in this group in which exposure took place before quarantine was established. Not included in these figures are 1,843 cases occurring in 839 families in which the same date of onset was given. Assuming that one case in each of these families was a primary case then the other 1,004 cases could be considered as secondary. When these are added to the other secondary cases there are 3,383 or 14.6% secondary cases in group I. The figures for 1934 were 14.8% and for 1935 13%.

In group 2 in Table 5 were placed all secondary cases that developed in the family after the first week of home quarantine. This group includes only cases after the first week of quarantine because those secondary cases occurring before that time might reasonably have become infected before quarantine was established. In the table the cases have been divided according to both the three and the four-week quarantine periods. During the three-week quarantine periods 4.1% and 4% of the home-quarantined cases were considered as secondary, compared to 3.5% during the four-week period. The number of secondary cases decreased gradually from week to week. To account for so many secondary cases during home quarantine there must be considerable exposure to the scarlet fever patient, or to such possible carriers of the infecting organism as the mother who is usually the one to care for the patient. Most susceptibles seem to become infected during the early weeks of quarantine which would account for the fact that there is no comparable rise in secondary cases the week after quarantine is discontinued. This is in contrast to what happens in the hospital-quarantined group as will be shown.

In group 3 in Table 5 were included all secondary cases that developed in the family when

the primary case was sent to a contagious hospital. Only cases developing after the first week were included for the same reasons as given for group 2. Some secondary cases developed in the home the second week after quarantine because often the primary case was not hospitalized at the beginning of quarantine and then the same conditions would prevail as in the succeeding group. During the three-week quarantine periods 1% and 6.5% of the hospital-quarantined cases were considered secondary and 5.9% during the four-week period. In this group there was a marked increase in secondary cases arising in the home immediately after termination of hospital quarantine and return of the primary case to the home. This was true for both the three and the four-week quarantine periods. There were more secondary cases arising in the home from hospital-quarantined cases than from cases quarantined at home. This is undoubtedly due to the fact that carriers of the infecting hemolytic streptococcus are more prone to occur in hospitals.

Grouping together all the secondary cases it was found that in 1934 20% and in 1935 17.3% of the reported cases could be considered as secondary arising in the home from exposures to a primary case. What number of secondary cases develop outside the home cannot be estimated. Approximately 74% of the secondary cases had their exposure before quarantine was established. Quarantine as now carried out is far from adequate and the present methods of control of scarlet fever leave much to be desired.

In this study it was found that the number of hemolytic streptococcus carriers did not vary from year to year. Positive cultures were only slightly more frequent in children with throat infections than in children with normal-appearing throats. The incidence of positive Dick reactors remained the same for both years. The number of cases of scarlet fever per infected family and the number of traceable secondary cases in the home remained approximately the same for both years although there were 60% more cases of scarlet fever reported the second

TABLE 5. TIME OF ONSET OF SECONDARY CASES OF SCARLET FEVER AFTER EXPOSURE

Group 1. Exposures before Quarantine was Established											Total Reported Cases 23056† per cent	
1 Day	2 Days	3 Days	4 Days	5 Days	6 Days	7 Days	8 Days	9 Days	10 Days	Over 10 Days	Total 2379 10.3	
212 8.9	266 11.2	240 10.1	276 11.6	201 8.4	219 9.2	228 9.6	178 7.5	98 4.1	114 4.8	347 14.5		
Group 2. Home Quarantine Exposures											Total Quarantine at home 5799 per cent	
				2nd week	3rd week	4th week	5th week	6th week	7th week	8th week	Over 8 weeks	
Three-week Quarantine Period, 1934.....				37.2	18.3	9.9	11.8	6.1	5.3	1.5	9.9 12	237* 309*
Three-week Quarantine Period Jan.-May, 1935.				44.9	22.7	10.1	10.0	4.5	4.9	3.1	3.7 18	4.1 166*
Four-week Quarantine Period May-Dec., 1935.				30.1	18.0	10.8	19.3	12.0	6.6	3.0	9.8 3.5	4742 per cent
Group 3. Hospital Quarantine Exposures											Total Quarantine in Hospital 3439 per cent	
1934				10.3	6.2	24.8	30.6	16.1	7.4	5.0	36 13.0 9	242* 7.0 118*
Jan.-May 1935				10.2	13.4	29.7	17.0	13.4	11.0	5.0	7.1 22	6.5 93*
May-Dec. 1935				4.3	14.0	9.7	23.7	31.0	10.8	6.5	18.1	5.9 1584 per cent

†1843 Cases Reported as Same Day of Onset Not Included.
*Cases Occurring After the Eighth Week Not Included in Totals.

That the decrease in secondary cases was not entirely due to the increase in the quarantine period seems evident from the fact that the number of traceable secondary cases was already decreasing during the early months of 1935 when the three-week period was still in force. In Table 5 the number of cases occurring in families more than eight weeks after the primary case is also given. There were few of these cases and it seems as though fewer susceptibles were left to develop the disease during the balance of the year.

year. It would seem that the increase in scarlet fever is really not due to an increase in the infectivity of the infecting organism (contagiousness of the disease) as much as to a higher proportion of scarlet fever strains of the hemolytic streptococcus during certain years.

DISCUSSION

Dr. Martin H. Seifert, Wilmette: This beautiful piece of work on scarlet seems quite significant in many ways. This last statement about the difficulty, of course, of differentiating the hemolytic streptococci that will cause scarlet fever by any simple cultural

methods is obvious. On the other hand, I read just the other day a very interesting article of Bailey in his recent survey in Illinois on hemolytic streptococci in grammar school children in an attempt to determine the number of organisms or the percentage of positive throats that are capable of producing scarlet. He felt that 90 per cent. of the hemolytic streptococci found in cultures from the throats of these children were demonstrated to be strains that were capable of producing scarlet fever; that 90 per cent. of those organisms produced toxins which neutralized the commercial anti-toxins on the American market. So, maybe after all, it is not so far-fetched to think that most of these hemolytic streptococci that are recovered from throats are capable of producing scarlet fever and at times perhaps do produce it. That is borne out in my work where we have picked up frequently, positive throats in individuals who were apparently perfectly well, and yet those individuals may be isolated with positive throats for as much as thirty-five days and finally develop scarlet fever at home.

His 17 per cent. positive cultures on the personnel and 4.2 positives of new personnel coming in was interesting to me in that I have consistently objected to the fact that so much of the work in determining the incidence of hemolytic streptococci in normal throats has been done on hospital inhabitants, which seems to me fairly worthless from the standpoint of normal incidence, and here again that is displayed. He had only about one-fourth of the incidence with new people just coming in contact with hospital patients that he had with people who had been residents of the hospital or worked in the hospital for some time.

Then, there is another thing that strikes me, and that is in many cases apparently there was one culture taken. I believe that will explain some of the discrepancies Dr. Bigler had a little difficulty with, and the same way with changes from positives to negatives and negatives to positives on two successive days. I do not believe that that means that the organisms were not there on one day and were there on the other. With the taking of food or drink or the gargling with this and the other thing, they are killed between the time they leave the throat and the time they get on the culture plate. And, if you don't happen to get a positive culture on one occasion I don't believe it means that they are not there. I think, very often, if these cultures were repeated three or four times you will get them most of the time, at least, in these throats.

CLASS DIFFERENCES SHOW IN BIRTH RATE

College trained men and women are frequently reproached for their responsibility for the failing birth rate. According to a recent survey, professional groups do better by the country than the business class.

This study was conducted in 5 large cities, and included 16,831 married women. Standardized birth rates were lowest in the \$2,000 to \$3,000 family income class. Higher income families had more children, so did those under \$2,000. Of all groups, however, the relievers were most prolific.—*Hospital Topics*.

ACUTE LARYNGITIS IN INFANTS

GLENN J. GREENWOOD, M. D.

CHICAGO

Acute laryngitis in infants is an inflammatory disease of the laryngeal intima, usually secondary to an acute upper respiratory infection, and generally associated with pathological changes in the lower respiratory tract. Its frequent severity, the peculiar regional anatomy, both microscopical and gross, the seemingly relative lack of immunity—here all combine to make this entity a pertinent pediatric problem. Jackson¹ for purposes herein divides acute inflammations of the larynx, per se, into (a) specific acute laryngitis; (b) nonspecific acute laryngitis. Acute specific laryngitis is an infective disease with a definite course and a self-limited termination. Different organisms produce the same clinical features, course and termination in this entity. Acute nonspecific laryngitis is due to causes other than specific infection, and does not follow a regular course.

It is the more severe, specific type of laryngitis with peculiarities incident to the infant that we are here concerned with. Questioningly one asks, "Why are these infants so severely ill, and what is the reason for their marked respiratory distress?"



Fig. 237.—Normal anatomy of the larynx (in the infant).

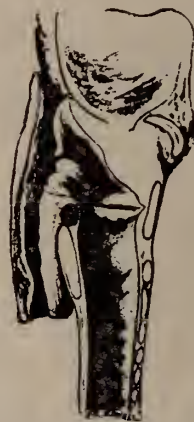


Fig. 238.—Normal anatomy of the larynx (in the child).

Photograph 1. "Comparison of Infant and Child Larynx." (By V. E. Negus.) From "Diseases of the Nose and Throat," by Sir St. Clair Thompson, p. 493.

Anatomically the infant larynx is a peculiar structure. It is at term usually at the level of

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the fourth cervical vertebra. As the child develops it descends until it reaches the sixth cervical at which level it is present in the adult.² Descent is gradual and is greater in the female than the male. The entrance of the infantile larynx is at much more of an acute angle, looking from behind, forward and down, than in the adult. As the child grows, the anterior-posterior cephalic lengthening permits the vertical portion of the tongue to carry the epiglottis forward. The larynx now assumes a more vertical position and lays more directly above the glottis and dependent trachea. The infantile epiglottis is narrow, tends to curve upon itself, causing the lateral borders to approach each other closer posteriorly. This permits the aryepiglottic folds to elevate themselves and diminishes the inlet of the larynx, making it smaller relative to the other laryngeal measurements. The antero-posterior dimensions of the glottis and subglottis are smaller, the latter being considerably less than the trachea.² The narrowest laryngeal dimension is in the subglottic zone. This area is surrounded by the only complete ring in the respiratory tract, and therefore any swelling here is at the expense of the lumen, be it caused by inflammation, infection or trauma. Tucker² states a subglottic measurement of six mm. or above may be considered normal, while a five mm. dimension, though small, is compatible with life. A measurement of four mm. he considers a stenosis, either congenital or acquired. One must remember, too, that the soft texture and compressability of the cartilages make for potentially smaller measurements, except for the subglottic region.

Histologically the mucosa varies in structure and thickness in different parts of the larynx. Many acinous glands are present in the thickened mucosal folds over the pharyngeal surface of the larynx, the ventricular bands and in the ventricles themselves. They are scant or absent, however, in the cords where the mucosa is thin stratified squamous epithelium and is closely bound down. Stratified pavement epithelium also covers the upper ventral one-half, and the whole posterior epiglottic surfaces extending down over the anterosuperior portion of the aryepiglottic folds. Pseudostratified columnar ciliated epithelium is found everywhere else.⁴ In infants the laryngeal tissue is very loose and especially is this true in the subglottic region

where a large amount of delicate areolar tissue abounds. The lymphatic vascularity is much greater in infants where the submucosa too, participates in the exudative swelling. The cords being lymphatic free, communication via the lymphatics above and below the cords is effected through the posterior laryngeal wall.³ This rich vascular areolar, almost spongy tissue permits a rapid inflow of serum, greatest in the subglottic region.

Bacteriology. Diphtheria was here ruled out before admission. Bacterial investigation proved of little value to us, only one case yielding a positive culture. The organisms apparently had either been rendered avirulent or had invaded the loose deeper tissue structure. Johnson⁵ believes that a mixed infection is present, while Platou,⁶ in the Kleb-Loeffler negative cases, found hemolytic streptococcus predominating. We believe this organism to be initially present. However, skin tests for hemolytic streptococcus and Dick tests, as done routinely by the late Dr. Silber Peacock, were all negative. When we come to name the bacteria that are responsible for infectious laryngitis, Jackson¹ writes, "We are immediately confronted with the shortcomings of bacteriology as it exists today."

There can be no question but what organisms that are morphologically and culturally identical may be really different organisms, these differences being regarded as "strains." A number of different and very distinct types of organisms can produce suppuration and these are called pyogenic bacteria. A parallel fact is that the same laryngoscopic appearances and clinical features can be produced by entirely different organisms. Jackson lists streptococcus hemolyticus, streptococcus viridans, staphylococcus albus, staphylococcus aureus, pneumococci of different types, micrococcus catarrhalis, B. Influenzae, bacillus diphtheria (in patients without diphtheria) as most frequently found here. So we see, that this disease can be produced by different organisms, and that possibly, in some cases, the organisms found may be secondary invaders and be responsible for marked mucosal damage, as pointed out by Farber.⁷

Pathologically the stages seen here are with modifications those seen in the nose and nasopharynx. There is an incubation period secondary to the primary upper respiratory infection, an initial ischemia followed by active and later

passive hyperemia. Glandular elements are relatively scarce here and secretion is consequently not abundant. When it is profuse it comes more from tracheobronchial involvement. The inflammatory exudate, initially absent, is, in the second stage, composed of mucus and epithelial debris, and lastly purulent with increase in the leukocytes and lymphocytes. Early edema accompanying the hyperemia is red, while later it takes on its characteristic pallor. It is noticeable in the loose mucosal folds, but stands out in the subglottic region where, coupled with the inflammatory exudate, it tends to plug up this area, causing obstructive dyspnea.

During the last ten years (1927-1937) thirty-six cases of acute laryngitis have been admitted

predisposing factors here. Jackson¹ avers that an excess of vitamins has proven itself clinically to be a powerful immunizing factor. In the temperate zone here, the wide fluctuation of temperature out-of-doors, the marked discrepancy between indoor and outdoor thermal readings are conducive to respiratory insult. Other contributing factors are excessively heated homes with resultant moisture diminution, less daily intake of green food and fruits, less fluid consumption, less sunlight exposure. Excessive clothing, obviating proper skin function and skin tone, is to be condemned!

SYMPTOMS

The majority of these infants are actually ill with a fever of 103° to 104°, F. (rectal reading).

ACUTE LARYNGITIS IN INFANTS

14 CASES—1933-34

Name	Color	Age (Mos.)	Sex	Ass. Disease	SYMPTOMS AND SIGNS														TREATMENT		REMARKS			
					Temp. (Max.)	Irritative					Obstructive							Medical	Surgical					
						Hoarseness	Cough	Aphonia	Resp. R.	Croupy Cough	Wheeze	Retraction			Dyspnoea	Restless	Cyanosis					Culture		
												Sup. S.	Sub. S.	I. Cost.										
D. Lary.	Intubation	Trach.																						
A.C.	W.	18	M.	R.P.	101.8	+	—	24	—	—	+	+	+	+	—	—	+	—	—	Fluids; C. Tent	—	—	Full recovery	
R.N.	W.	12	M.	R.P.	103.4	+	—	46	—	—	+	+	+	+	—	—	+	1+	+	Seda. C.&O. Tent	—	—	Full recovery	
K.M.	W.	14	M.	R.P.	104.4	+	—	Lab.	—	—	+	+	+	+	—	—	—	—	—	Benz. C. Tent	—	—	Pallor; listless	
A.S.	W.	13	M.	L.T.B.	104	+	—	—	—	—	—	+	+	+	—	—	+	—	—	—	2+	—	Sl. Hoarse at Disch.	
R.B.	W.	12	M.	P.Abs.	104	—	—	—	—	—	+	+	+	+	—	—	2+	+	+	Steam Room	—	+	Sl. Hoarse at Disch.	
C.H.	W.	10	F.	R.P.	100	—	+	—	28	+	—	+	+	—	—	—	+	—	—	—	—	—	Full Recovery	
R.R.	W.	15	M.	R.P.	100.2	+	+	—	?	—	+	—	—	—	—	—	+	—	—	—	—	—	Full Recovery	
S.R.	W.	9	F.	R.P.	100	+	+	—	?	—	—	—	—	—	—	—	+	—	—	—	—	—	Full Recovery	
W.T.	W.	9½	M.	—	104.4	+	+	—	68	+	+	+	+	—	—	—	+	+	+	20,000 U.A'toxin; 0. Tent	—	24	Hoarseness persists	
C.C.	W.	12	M.	R.P.	104.2	+	+	—	40	+	—	+	+	—	—	—	+	—	—	Luminal; Mosher L.S.	—	—	Hoarseness persists	
J.C.	W.	12	M.	R.P.	104.4	+	+	—	?	+	—	—	+	—	—	—	+	—	—	Luminal; Steam	—	—	Hoarseness persists	
P.K.	W.	5½	F.	AS.B.	99.4	+	+	+	?	—	+	+	+	—	—	—	+	—	+	—	—	—	Full Recovery	
L.T.B.																				Steam, etc.	—	—	Full Recovery	
A.T.	W.	14	M.	R.P.	103.4	+	+	—	48	—	—	—	—	—	—	—	+	—	—	Steam	—	—	Dischg. with cough.	
H.M.	W.	9	M.	R.P.	103	+	+	—	26	—	+	—	—	—	—	—	+	—	—	Steam Room; Atropine	—	—	Dischg. with cough.	
					12	9	1		4	3	9	10				12	3	3	1			2	1	1

to the Cribside Service. Of this number, fourteen came in during the winter of 1933-34 and constitute the basis for this report. Some were from orphanages; others from itinerant homes. Most were quite well nourished, but many had been sustained upon deficient diet with a resultant lowering of their immunity.

Immunity is an important factor in these infants. Where the larynx is host to an initial severe acute infection a very serious pathological state occurs. Having had no previous attacks there is little or no relative immunity and a maximum of soft tissue reaction occurs. Vitamin deficiency is undoubtedly one of the basic

Usually an associated rhinopharyngitis (ten of the fourteen) is present. Pulse is rapid; respiratory distress most prominent. Hoarseness appears early, preceded or followed by a cough; only one child here had aphonia. Respiratory rate varied from 24 to 68. Croupy cough, denoting subglottic obstruction, was present in four cases, stridor in nine, and suprasternal retraction in ten infants. Tucker⁸ attributes this marked suprasternal retraction to the trapdoor action of the vocal cords. The ventricle floor is higher at the margin of the cord than it is laterally. Inspiration has a tendency to pull the cords together, narrowing the rima of the glottis.

This produces an increase of the intrathoracic negative pressure with the resultant typical indrawing. Restlessness, an ominous sign, appeared in three cases, and with it a fear of sleep, for sleep cuts out the voluntary effort responsible for the activity of the accessory muscles of respiration. Cyanosis appeared in one infant. It is a cardinal warning sign and coupled with the listless appearance of the child, who is too tired to fight, is a condemning picture. Restlessness, fear of sleep, and suprasternal retraction beg for immediate surgical interference, whereas listlessness and cyanosis are signs of such physical depletion that even with the aid of surgical intervention the end is usually but prolonged.

TREATMENT

General and local.

(a) General aims at the setting up and maintaining a proper water balance. It is best taken by mouth, but if an adequate amount cannot be given this way, recourse is had to parenteral or intravenous routes. Liquid and soft foods supply the balance of caloric requirements. In all these cases a nurse thoroughly versed in the care of these patients is in constant attendance.

Medication is mentioned more for contraindication, than indication. Sedatives, as opiates and barbiturates, are contraindicated for they slow respirations and inhibit the cough reflex. All sedatives, as Hyde and Ruchman⁹ pointed out, inhibit the voluntary effort needed to keep the accessory muscles of respiration active to relieve the dyspnea. Belladonna or any of its derivatives is contraindicated too, for it cuts down secretions helpful in eliminating the material obstructing the larynx.

Rest is important in these cases. Too frequent examinations and unnecessary minute nursing care disturb the infant and are only conducive to greater fatigue.

(b) Local measures: Croup tents are desirable, but steam rooms are preferable. Vapor saturation of the warm air is conducive to elimination of the thickened material obstructing the narrowed laryngeal orifice. It should not be oppressive for then it only adds to the child's discomfort. Volatile oils, as irritants to the respiratory tract, increase the vascular load and are of little or no therapeutic value. The oxygen tent is a valuable asset and was frequently used in these cases exhibiting dyspnea.

Direct laryngoscopy is indicated, Tucker⁸ states, in two groups of symptoms; first, where there is trouble in phonation, including aphonia and croupy cough; secondly, where symptoms of difficult breathing, including stridor, dyspnea and wheezing with suprasternal retraction, are present. The procedure will, for the time being, increase the infant's discomfort, but a correct diagnosis can be made and, with the necessary equipment, any emergency can be adequately handled. Uncontaminated cultures can be had, secretions removed and any pathological condition noted. The subglottic area can be viewed and recommendations made for further local care.

Intubation and tracheotomy are two lifesaving measures, one of which should be done where the signs of obstructive laryngeal dyspnea, namely supra and substernal retraction with or without restlessness, are present. Tracheotomy is best done early to preclude emergencies with their resultant calamities, and to prevent insult to the respiratory centers because of prolonged oxygen depletion!

When the cardinal signs of obstructive dyspnea appear, one is forced to choose between intubation and tracheotomy. Intubation may be direct or indirect. Direct is preferred by endoscopists. Indirect may be necessary where an endoscopist is not available. If it is the procedure chosen, it should be done preferably in a hospital where there is at all times an expert or his assistant available upon short notice. No one should attempt this procedure who has not had much cadaver practice! The O'Dwyer tubes are still the most perfected. If intubation is required longer than two weeks, tracheotomy should be done. Tracheotomy amongst the older practitioners has probably justifiably had much opposition, for it is, as Jackson¹⁰ states, one of the oldest surgical procedures, yet is more often badly done than any operation in the whole field of clinical surgery. Yet, if we analyze the situation, we see that it is too often done late, and then as a dire emergency, and is done high, with a secondary laryngeal stenosis as the result. Tracheotomy has the advantage that every practitioner can or should be able to do it correctly, that is, below the second tracheal cartilage. It should be done early.

One should memorize Jackson's tracheotomic triangle and his method of surgical approach

223091

before doing an emergency tracheotomy outside of hospital practice. Keep in the midline; bring



Sternal Notch
Jackson's Tracheotomic Triangle
Photograph 2.

the trachea into relief; push aside the sternocleidomastoid muscle and vascular compartment; incise from the cricoid to the suprasternal notch. Protect the scalpel with the right third finger and cut below the second tracheal cartilage. In hospital practice we insert an infant bronchoscope past the obstruction and then do a tracheotomy over the rigid tube, inserting the cannula as we withdraw the scope. The late Fletcher Ingalls,¹¹ a pioneer Chicago endoscopist, years ago called attention to the advantages of this procedure. Immediate postoperative tracheotomic care should be in the hands of a nurse thoroughly versed in the care of tracheotomized patients, one who will constantly keep the airways clear with adequate aspiration and notify the doctor when any symptoms of respiratory obstruction do not respond to this procedure.¹

In this series of fourteen cases, only one patient required repeated intubation; he is still somewhat hoarse. One case required tracheotomy which was done through the third tracheal ring and the subsequent course was uneventful. All fourteen cases recovered. Hoarseness still persists in three cases.

CONCLUSION

Specific acute laryngitis in infants is a pertinent pediatric problem. When signs of obstructive dyspnea appear, the endoscopist or the endoscopically-trained laryngologist should be sum-

moned. For immediate relief either intubation, the use of life savers, or tracheotomy is necessary. We believe that in infants low tracheotomy conserves the laryngeal structure better than intubation.

104 S. Michigan Avenue.

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DISCUSSION

Dr. Paul Holinger, Chicago: This is an extremely interesting paper and hardly needs further discussion because Dr. Greenwood has covered the subject so completely. We all realize the urgency with which these patients have to be seen and treated in order to save life. Obstruction of the larynx in a child is an emergency one must be ready to meet. When we realize how small the larynx of an infant really is, it is easy to see that with even a slight inflammatory reaction there is great danger to life.

The use of atropine and morphine in cases of acute laryngitis is to be condemned, because it reduces the infant's ability to breathe through an already obstructed larynx, and because the desiccated secretions add obstruction to the airway. The lymphatics carry infection downward in much the same way that erysipelas travels on the skin, and only too frequently they carry infection down to the trachea or bronchi, bringing in another type of infection—laryngotracheobronchitis. The differential diagnosis can be made by endoscopy, but this raises another controversial point. Because of the risk of doing a direct examination in a patient with obstruction we hold off as long as possible. If the procedure can be avoided, it should not be done, because only too frequently it precipitates an acute emergency in a child. In many large clinics a direct laryngoscopy is performed on admission in every case of laryngeal obstruction in children, in order to make an accurate differential diagnosis. The diagnosis can be made fairly accurately, however, from the clinical picture and his-

tory, and only in doubtful cases should laryngoscopy be done. There are two schools of thought; one advocates direct laryngoscopy immediately; the other prefers to postpone it as long as possible. Of course, such an examination can be made only by means of the direct laryngoscope, and this should always be available when treating cases in which there is obstruction.

One of the most satisfactory procedures in cases of acute obstruction when tracheotomy is imminent is to make a tranquil operation out of an emergency procedure. The bronchoscope is inserted for safety's sake and serves a double purpose, since it affords a view of the trachea and bronchia and, at the same time, relieves the dyspnea.

I certainly enjoyed listening to Dr. Greenwood's paper.

Dr. Thomas C. Galloway, Evanston: The question of diseased or abnormal conditions in obstructive laryngitis is not so simple. Various investigators have demonstrated, following obstruction in a bronchus, marked disturbance in the lower bronchial tree, including vascular changes, edema, exudate, capillary damage, atelectasis, emphysema and perhaps later bronchiectasis. Tracheobronchitis is often a complication of laryngitis and may be severe enough to require cannulation.

We should be prepared to put in a bronchoscope or do a tracheotomy, and we do not make a laryngeal examination until we are ready to do so. When one has once done a tracheotomy over a bronchoscope he will be loth to do it any other way. When the bronchoscope is in place we can take our time about tracheotomy. I much prefer a tracheotomy to intubation in these cases because it permits aspiration of the thick, tenacious secretion. However, one gets more crusting than with intubation.

Very little has been said about postural drainage in treatment of these cases and I think it is important. The foot of the bed must be elevated at least 15 degrees, and it is better with a young patient turned on the face. (A colored film, illustrated treatment of laryngotracheobronchitis, including bronchoscopy, deliberate tracheotomy, postural irrigation and drainage.)

Dr. Glenn Greenwood, Chicago (closing): There is nothing further to add, except that I wish to say that prior to 1935 at Children's Memorial we had real difficulty in getting the pediatricians to cooperate with us, because we did not fill their expectations of what should be done. Since Dr. Holinger has come out we have had a complete bronchoscopic unit installed, and have had the greatest cooperation between all departments.

It has been some months since we've seen in the letter column a communication from "Taxpayer." We fear the old codger can no longer afford postage stamps.—*Washington Post*.

Doctor: "How did you come by the broken leg?"

Mike: "D'you see thin stairs?"

Doctor: "Yes, I do."

Mike: "Well! Oi didn't!"—*Health Digest*.

ESTROGENIC THERAPY OF MENOPAUSAL DISORDERS

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In a previous publication a syndrome suggestive of estrogenic deficiency was presented. Subsequent experience has demonstrated that such is not always the case prior to the menopause but that during or after the menopause any combination of the following symptoms must be given consideration as evidence of estrogenic deficiency.

SYNDROME SUGGESTIVE OF MENOPAUSAL DISORDERS

Hot flashes.

Exhaustion.

Insomnia.

Nervousness and irritability.

Vaginal irritation.

Psychic disturbances (emotional instability, weeping, depression, disturbing dreams, apprehensions of social contacts and suicidal tendencies).

Headache

Nausea.

Backache.

Leg pains.

Dizziness.

ASSOCIATED CONDITIONS

Hypertension.

Atrophic rhinitis.

Colitis.

Arthritic symptoms and

Skin eruptions.

Corroboration of these clinical observations has been provided by the work of Papanicolaou^{2,3} et al and Davis.⁴ Both groups have demonstrated, one by means of vaginal smears, the other with biopsies of the vaginal mucosa, that adequate estrogenic therapy in menopausal disorders produces a return to normal of the vaginal mucosa accompanied by symptomatic relief, and that cessation of therapy is followed by regressive changes in the vaginal mucosa with recurrence of subjective symptoms. This relationship between vaginal change and clinical response has been encountered so consistently in a series of patients at various stages of therapy as to indicate that where methods for vaginal smear are not available subjective symptoms may

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be accepted as indication for therapy, and clinical response used as criteria for dosage.

Endocrine factors involved. Quantitative determinations of estrin and prolan content of the blood and urine have provided an explanation of the changes in glandular function responsible for the variations and multiplicity of symptoms of the menopause. Cessation of ovarian function is accompanied first by reduction of the blood estrin and later by progressive increase in blood concentration of prolan⁴ (the follicle stimulating factor of the anterior pituitary). Adequate replacement therapy with estrogenic substances causes an almost immediate return to normal of blood estrin which when maintained is followed by decrease of prolan in the blood and alleviation or complete disappearance of clinical symptoms.⁴ These observations indicate that normal pituitary function is dependent on normal blood estrin content and that low estrin levels permit abnormal function of the anterior pituitary, resulting in disturbance of the entire glandular mechanism. Restoration of normal estrin levels by replacing the normal regulatory mechanism of the anterior pituitary promotes return of normal function of the glandular system with disappearance of the subjective symptoms.

The validity of the above conclusions would seem to be substantiated by clinical results. When menopausal symptoms are corrected by adequate estrogenic therapy *soon after* their initial appearance prompt and complete relief is obtained and the severe symptoms are entirely avoided. Conversely, if therapy is delayed until the later stages, much larger amounts of estrogenic substances over a longer period of time are necessary before the same degree of symptomatic relief is obtained.

Principles of Therapy. One of the most confusing factors in the treatment of menopausal disorders has been that hot flashes, probably one of the most frequent and disturbing symptoms of the menopause, have become synonymous with the term "menopause." As a result, absence of hot flashes has been accepted as indicating absence of menopausal disorders. On the contrary, careful analysis frequently reveals various combinations of symptoms with complete absence of hot flashes which nevertheless may be accepted as an indication for estrogenic therapy. Since the introduction of estrogens of high concentration it has been possible to obtain relief in a

much larger proportion of patients. The variations of therapeutic requirements which have been encountered provide the explanation for the failure of routine methods in the treatment of menopausal disorders. Accurate determination of the requirements in each instance is necessary to obtain maximum relief.

Three types of reaction following parenteral administration of estrogenic substances have been observed and found of value in establishing the diagnosis and in determining the dosage in each individual. These reactions occur within one hour after intramuscular injection and are of considerable significance even though transitory.

1. *Total absence of reaction*—usually indicates that estrogenic deficiency exists, and that initial dosage has been inadequate and should be increased.

2. *Improvement or relief of symptoms* and a feeling of well-being is evidence that an actual estrogenic deficiency exists and that therapy should be continued.

3. *Exaggeration of symptoms*, extreme exhaustion, pain in ovarian regions, or bearing down sensations.

- a. If transitory and followed by relief of original symptoms, indicate that estrogenic deficiency exists but that dosage was excessive and should be decreased.

- b. If prolonged and *not* followed by relief of original symptoms that estrogenic deficiency does not exist and therapy should be discontinued.

Determination of dosage. A combination of parenteral and oral therapy is used in the treatment of menopausal disorders. Determination of the dosage required in each instance is first obtained by intramuscular injection of amniotin in oil. Depending on the severity and duration of the symptoms, from 100 to 500 international units of Squibbs amniotin are injected into the deltoid muscle. The patient is instructed to observe the effect within an hour and is asked to report daily. The clinical response as outlined above is used as the criterion for increase or decrease of succeeding injections. The unit strength of the daily injection is increased until the minimal amount is ascertained which will give symptomatic relief for from three to 12 hours. This dosage rarely exceeds 10,000 units and upon its determination the patient is placed

on oral therapy in divided doses. If the parenteral requirements have ranged from 1,000 to 10,000 units, oral therapy of from 3,000 to 20,000 units of amniotin is given daily in capsule form (1,000 or 2,000 unit capsules). If the requirements have ranged from 300 to 1,000 international units, an oral preparation of lower potency is indicated and the patient is placed on from 150 to 600 biological units of progynon (50 unit tablets). Daily requirements of 300 units or less indicate the presence of a very mild deficiency and Collip's emmenin is used in either tablet or liquid form, giving either one tablet or its equivalent, 1 dram of the liquid preparation, three or four times daily. In those patients who obtain relief or manifest adverse symptoms with subsequent improvement, with as little as 100 units of amniotin parenterally, complete symptomatic relief may be possible with as little as $\frac{1}{2}$ dram of emmenin two or three times daily.

If complete relief of symptoms cannot be maintained by oral administration alone, adequate amounts of amniotin in oil are given parenterally as an adjunct. When such additional therapy is necessary progressive decrease in frequency and dosage is possible until eventually symptomatic relief may be maintained by oral medication only. The patient is instructed that continuity of therapy is the most important factor in obtaining permanent results and that as results are maintained, reduction of oral dosage becomes possible and necessary. This reduction is continued until each patient is eventually placed on the liquid preparation of Collip's emmenin which in addition to being the mildest form of the estrogenic preparations is best adapted for obtaining the small, divided doses required at this stage of the treatment. In almost every instance it will eventually become possible to reduce the dosage to one half dram of emmenin once or twice weekly. In a large series of cases it has been found that even at this point, cessation of therapy is followed by recurrence of symptoms in from three months to one year. During the past two years in those patients who have continued on small dosage without interruption it has been possible to maintain a permanency of therapeutic results which in addition to being the eventual goal has done much to justify the initial expense.

Clinically it has been ascertained that the

symptoms produced by excessive therapy are as distressing to the patient as those resulting from lack of therapy. Any adverse symptoms which develop after a maintenance dose has been established are usually due to the fact that the requirements of the patient have decreased and that reduction of dosage is necessary. If improvement does not occur promptly therapy should be discontinued temporarily and resumed only after disappearance of adverse symptoms.

ILLUSTRATIVE CASE REPORT

M. D. 3-4-38. Age 48, unmarried. Menses began at age of 15, irregular at first, then every 28 days, duration four to five days, profuse, no pain. Absence of menses for past two years.

Symptoms. Hot flashes, exhaustion, backache, feeling of pressure in head, dizziness.

Physical findings. B.P. 154/84. Uterus small and third degree retroversion present. Adnexia normal. Moderate macroscopic atrophic changes in vaginal mucosa.

Therapy.	Parenteral Amniotin in oil.	
3- 4-38	200 I. U.	No change.
3- 5-38	500 I. U.	No change.
3- 7-38	1000 I. U.	Feeling of well-being of short duration.
3- 8-38	2000 I. U.	No marked changes. Still having flashes and perspiration.
3- 9-38	5000 I. U.	Felt light-headed following injection but no flashes, decreased dizziness and perspiration.
3-10-38	4000 I. U.	Oral therapy started. Progynon tablets 50 units, t.i.d.
3-12-38	4000 I. U.	Feeling better, no hot flashes, no dizziness, occasional fullness in head.
3-14-38		Feeling better. Previous symptoms have disappeared. B.P. 140/80 and progynon increased to 1 tablet q.i.d.
	500 I. U.	
3-23-38		Definitely better, but occasional lightheadedness and pruritis. B.P. 130/80. No injection.
3-30-38		Occasional dizziness. Pruritis has disappeared. B.P. 130/76.
	500 I. U.	
4- 9-38		Fullness in head. Exhaustion.

500 I. U.

4-12-38

Improvement after last injection.

5- 4-38

Has been entirely free from previous symptoms except occasional dizziness and recent pruritis. B.P. 126/74. Oral therapy decreased to progynon 50 units t.i.d.

Prophylactic Therapy of Surgical Menopause. Surgical menopause following bilateral oophorectomy, or ovarian ablation by means of x-ray or radium, is known to produce the most severe type of menopausal symptoms. Institution of estrogenic therapy at the time of operation with gradual increase in therapy as indicated will greatly minimize, and in some instances, entirely prevent subsequent development of untoward symptoms. In the more mild type resulting from hysterectomy with or without partial removal of ovarian tissue, therapy prior to operation is often indicated by the presence of characteristic symptoms. In either group adequate therapy immediately following operation will have a marked beneficial effect on the postoperative convalescence.

Relationship of Estrogenic Therapy to Carcinoma. The relationship of the estrogens to carcinoma is of universal interest. That there is an association has long been apparent but at the present time there is no evidence that estrogenic therapy has been an etiologic factor in the production of carcinoma in women. On the contrary, the development of this condition in women occurs most frequently at the time of, or after the menopause. The fact that this development coincides with the period of greatest estrogenic depletion in women cannot be reconciled with the contention that correction of this depletion by estrogenic therapy may be an etiologic factor. Consideration from this viewpoint suggests strongly the possibility that the deficiency itself may be a most likely factor. Experimentally, carcinoma of the breast has been produced in mice by massive dosages. The fact that the experimental animal is a normal functioning glandular mechanism and that correspondingly massive doses for women are not available may be of significance. It is, however, true that the development of the tissues in the breast and genital organs from which carcinoma develops is dependent on the control of

the active principles of the ovary, namely estrin and progesterone. The fact that carcinoma is an abnormal growth of these normal tissue cells would suggest some abnormal endocrine activity as a possible etiologic factor.

It is the belief of the author that if subjective symptoms are used as a criteria for therapy, estrin will be administered only in those women having an estrogenic deficiency, while massive doses administered to women having normal ovarian function might result in abnormal tissue growth and the production of carcinoma. An analagous situation may be cited in our knowledge of the relationship of x-ray and radium to carcinoma. It has long been a matter of common knowledge that both of these factors, while being effective in the destruction of cancer cells, also in some instances serve as etiologic factors in their production. May not the same thing be true of the estrogens? Improvement in assay methods offers the greatest possibility for enlightenment on this question. In the meantime, in view of the lack of more definite evidence and the highly beneficial results of estrogenic therapy its continued judicious application seems to be indicated.

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- I desire to express my appreciation to Mr. McKenna of Ayerst, McKenna & Harrison, and to Dr. Morrell of E. R. Squibb & Sons, for the large quantities of estrogenic substance they have provided for this study.

DISCUSSION

Dr. Fred S. Stahmann, Peoria: Dr. Schneider has given us a very complete and practical presentation of the use of estrogen in the management of the menopausal patient.

The types of immediate reaction observed after the administration of estrogen are especially interesting, and by closely observing them, together with a close analysis of the patient's symptoms, we should be able to determine the type of patient that will respond to estrogenic therapy with greater certainty.

I would like to emphasize the point that frequently quite large amounts of estrogen are necessary at the outset to obtain satisfactory results in most cases, as well as the importance of continuing the therapy when symptoms are once under control to prevent severe exacerbations. Recent reductions in their cost, and the production of estrones of high concentration, make it much easier to begin adequate therapy and by util-

izing a plan of combined oral and parenteral therapy, we can more satisfactorily follow these patients throughout the duration of their discomfort.

Dr. Fred H. Falls, Chicago: I think Dr. Schneider's conclusions are correct, that a balance of the hormones will be found to be necessary rather than the presence of any one hormone. The varying amounts of progesterin in the blood in various menopausal problems is interesting. In my experience in the use of estrogenic substance for menopausal disorders, emmenin has given the best results. It is well to remember the point Dr. Schneider brought out that we can do harm by the use of these hormones as well as good. The suggestion for trying them out is good; if the symptoms become worse, then the injections should be discontinued. The whole subject awaits a very important piece of work from the laboratory man, namely, an accurate clinical method for the establishment of the amount of these hormones in the blood. As soon as we have a method by which we can say there is so much estrogenic hormone in the blood, so much thyroxin, so much progesterin, so much anterior pituitary hormone, then we will be able to make an analysis and to attempt to restore the balance that is upset by the menopause and the treatment will be on safe ground. At the present time it is more or less a matter of trial and error.

Dr. Philip F. Schneider, Evanston (closing): I would like to thank Dr. Stahmann and Dr. Falls for their discussion. I am sorry that it has not been possible for me to have some of the slides available for demonstration of the vaginal smear method. In the patient with menopausal symptoms the vaginal smear is of considerable diagnostic and prognostic value.

RADIOLOGIC AIDS IN THE DIAGNOSIS OF HEART DISEASE IN CHILDREN —A REVIEW

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The modern roentgenologic examination of the heart in children is of unquestionable aid in the diagnosis of cardiac disorders. In general, the same radiologic methods are used as in the adult. The fluoroscopic examination and the teleoroentgenogram or two-meter plate of the heart are the principal methods used in children. The fluoroscopic study approaches a more physiological examination while the teleoroentgenogram is a permanent objective record and demonstrates fairly accurately cardiac shape and size. In infants a teleoroentgenogram at 60 cm.

distance may be used without error. The teleoroentgenographic projection of the heart shadow is a fluoroscopic examination with the tube at a distance of 200 cm. It is not used generally because a tube of greater energy output is necessary. The orthodiagram is a direct tracing, made by the observer, with a movable tube connected to a writing arm, in which only the central parallel rays are used. It is an accurate, simple, and inexpensive method and well adapted to older children. Infants are best examined under the fluoroscope.¹ The roentgenokymographic tracing of the heart silhouette has been shown to be of value in adult cardiac examination, whereas in pediatrics, it has been rarely used and must await further study before an evaluation of the method can be made.

In infancy and early childhood the value of the radiologic examination is considerably overshadowed by that of the child after five years of age. This is due to anatomical changes as well as etiological factors. The cardiac silhouette of infancy is less differentiated because the auricles are proportionately larger, the ventricles approach each other in size and the thymus causes the heart to assume a more transverse position. The infant's heart is considerably larger in comparison to the body weight than that of an older child, and its superior inferior diameter decreased. Etiologically, the heart shadow shows few characteristic changes of radiologic value besides congenital lesions. This is obviously due to the rarity of rheumatic fever in infancy and early childhood.

A fundamental understanding of the normal anatomy of the heart is imperative for proper interpretation of cardiopathological change. The anatomical borders of the heart are best studied in the postanterior, right and left anterior oblique positions. The right cardiac border in the post-anterior view is composed of three parts. The upper portion is formed by the superior vena cava and is prominent and relatively larger in young children. The middle right heart border is formed by the ascending aorta and is not seen until after the age of six to eight years. It is usually small and indistinct and during infancy may not be seen. The third and lower portion is a large distinct bulge of the right auricle, proportionately greater and well to the right of the sternum in young children. In infancy and early childhood the right heart

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silhouette is distinctly convex, longer and bulges more than in the older child's heart. The left border of the cardiac shadow is somewhat longer than the right border in young children, but almost equal in length during infancy, and definitely longer in older children. The aortic knob or uppermost part of the left heart shadow is not normally present in infancy and childhood until after the age of six to eight years. The pulmonary conus is the next lower border and is composed of the upper right ventricular infundibulum and pulmonary artery. This shadow like the aortic knob is not seen in early childhood. The left auricular appendage shadow lies immediately below the pulmonary conus and forms a long border in early infancy and a very small straight or slightly convex border in childhood. The left ventricular shadow composes the lower two-thirds of the left heart border, from the left auricular border to the diaphragmatic leaflet. Often in infancy and early childhood the entire caudal border of the heart is visible. The oblique projection of the heart shadow is of little value in infancy and early childhood, but after the age of three or four these views are increasingly important. The right anterior oblique position is invaluable in studying the size of the auricles, especially the left in relationship to the barium filled esophagus. The left anterior oblique position is imperative in all heart examinations because of the clear visibility of the course and position of the aorta and size of the ventricles.

The diagnosis of general cardiac enlargement by the roentgen ray has become an important procedure in pediatrics. A murmur of dubious origin may be interpreted more intelligently; serial plates or tracings may indicate early enlargement, improvement, or regression of an active rheumatic cardiac involvement.

During infancy and early childhood the transverse diameter of the heart is generally conceded to be inaccurately correlated to body build, weight, height or width of the thorax. A more significant relationship is found in children after the age of four to five years, and the size of the heart shadow can be interpreted with more assurance. The most popular method used today to indicate cardiac size is the study of the cardiothoracic index. To determine the size relationship of the heart to the chest by this method the cardiac shadow must be measured in

its widest diameter in the postanterior view. This is commonly drawn and measured on the screen or flat plate. A vertical line is made in the midline of the chest corresponding to the dorsal spines. The lateral shadows of the heart at their widest diameter are now drawn. The left horizontal diameter is made from the midline to the widest area of the left heart border. The right horizontal diameter is drawn from the midline to the right heart border in its widest diameter. The combined measured distance from the left border to the midline and from the right border to the midline in its maximal width is called the transverse diameter of the heart. The internal diameter of the chest is a transverse line drawn between the widest points of the chest immediately above the lateral diaphragmatic attachment. The relationship of the transverse diameter of the heart to the internal diameter of the chest is called the cardiothoracic index. The normal transverse heart diameter is generally agreed not to exceed 50-60% of the internal diameter of the chest. Some pediatricians feel, however, that 50% or more constitutes an abnormally enlarged heart. There is evidence also to indicate that 25 of 100 normal children may have a cardiothoracic index over 50%.² A heart is rarely normal if it exceeds 57-60% of the internal diameter of the chest and therefore is the norm of choice in determining enlargement by the cardiothoracic index. These measurements show an error when the pulmonary conus is enlarged, and therefore, other diameters are necessary. Cardiac enlargement may be detected by known standard normal measurements with tables for various types of body build according to age, length and weight, or accurately from calculations with formulas and expressed as frontal area in square centimeters. Volume determinations are not generally used but are the most exact expression of cardiac size.³ The heart size determined by measurements of the cardiac shadow should be generally interpreted freely and are perhaps better than no measurements. It is difficult especially in the young child to rely upon so-called normal standards and sometimes general impressions are more reliable than cardiac measurements.

Individual and multiple valvular lesions of the heart produce characteristic cardiac chamber enlargement which may often be suspected or diagnosed from the cardiac silhouette. It is well

known, however that severe rheumatic carditis especially in its initial phase or advanced decompensated and dilated hearts may obscure all characteristic chamber enlargements in children regardless of high grade valvular lesions. In these conditions cardiac enlargement may be obvious but the valvular chamber enlargements are obscured. The true value of the radiologic examination is in cases of valvular lesions of the mildly active rheumatic involvement or inactive rheumatic heart disease with or without mild or moderate congestive failure. Pure aortic valvular lesions from rheumatic fever, especially with free aortic regurgitation or high-grade aortic stenosis produces a left ventricular enlargement. In the presence of aortic stenosis, the postanterior view of the lower cardiac border is rounded and enlarged usually slightly to the left; nothing of note is seen in the aortic area. Free regurgitation of the aorta and hypertension produces a more marked enlargement of the left lower cardiac border downward and to the left producing the "boot shape" heart. The aortic knob in the former may be prominent and wide fluctuations noted along the aortic course and left ventricular border. The oblique views, especially the left anterior oblique, confirms these findings.

Mitral regurgitation is the common valvular lesion of childhood. The cardiac silhouette shows mild enlargement of the left ventricle and the right ventricular enlargement causes some fullness of the pulmonary conus. The left cardiac border is therefore straighter than the concave border of the normal heart. The left auricle is only slightly enlarged and usually does not produce a deviation of the barium filled esophagus in the right anterior oblique position.

Mitral stenosis, however, produces a more typical configuration. The left ventricle is not enlarged and the right ventricular enlargement pushes the non-resistant left ventricle to the left. The aortic knob is seen poorly, or not at all, but the pulmonary conus becomes prominent in the postanterior view causing the middle portion of the left cardiac border to become straight or convex producing mitralization or the so-called egg-shaped heart of mitral stenosis. The marked dilatation of the left auricle from high grade stenosis is usually not seen in postanterior view; but in the right anterior oblique position can be well seen encroaching upon the retrocardial

space and deviating the barium filled esophagus in a definite posterior curve. The esophagus may be displaced slightly to the right in the postanterior view. The roentgenologic evidence of mitral stenosis may be the only immediate means to differentiate causative factors producing a diastolic murmur at the apex.

Late congenital syphilis with simple or complicated aortitis is a pathological curiosity in children.⁴ A widening of the aorta with free pulsations must not be taken lightly as a syphilitic aortitis. Rheumatic aortic regurgitation, hypertension, and coarctation of the aorta must be excluded before luetic aortitis can be considered in the diagnosis.

The heart shadow is influenced by vitamin deficiency diseases and the roentgenogram is of considerable aid in the diagnosis of nutritional cardiac conditions of infancy and childhood. Beriberi may produce a bulge of the pulmonary conus and right lower cardiac border. Infantile scurvy, according to Hess⁵ produced cardiac enlargement more especially of the right ventricle and broadening of the base of the cardiac shadow by the roentgen rays. Vitamin D deficiency apparently causes cardiac enlargement of one or both ventricular chambers probably from thoracic deformity.

The heart in the hypothyroid state during childhood may be generally enlarged, and the radiosopic examination may simulate a pericardial effusion. Very little is known, however, of the heart in hypothyroidism and cretinism during childhood and other conditions producing cardiac enlargement to the right and left must be eliminated before such a diagnosis is attempted.⁶

Deformities of the chest and spine produce cardiac displacements and sometimes cardiac embarrassment. Deep funnel chest from acquired or congenital causes usually displaces the heart into the left chest and may also produce right or left, or combined, ventricular enlargement. Kyphoscoliosis also displaces the heart; right convexity causes left displacement, the heart having a mitralization silhouette; left convexity, a right displacement and wide aortic configuration.

Pericardial disease has assumed an important position in pediatrics and the roentgenological examination may often be the only means of detecting the lesion. Moderate or large free

effusions of the pericardium are demonstrated by absent or decreased cardiac pulsation, characteristic rounding of the silhouette, i. e., "water bottle shape" and shortening of the vascular shadow. Advanced cardiac dilatation often presents a similar contour to pericardial effusion, and may be indistinguishable. Small effusions are difficult or impossible to detect in young children but in older children may be suspected by observing a collection of fluid at the level of the inferior vena cava in the inferior posterior recess or sinus of the pericardial cavity. Chronic pericarditis occurs pathologically in two types: first, pericardial thickening with adhesions to the mediastinum and surrounding structures producing a mediastinopericarditis. The cardiac silhouette is usually enlarged and fixed; tent-like shadows occur along the margins and there may be mitralization of the left cardiac border. It should be noted, however, that the heart is subject to various changes in shape and size due to the underlying disease associated with the pericardial involvement. The second and more important chronic pericardial disease is the so-called Pick's disease or chronic constrictive pericarditis. The heart pathologically is encased in a fibrous or callous-thickened pericardial sac producing a marked constriction of the heart and causing an "inflow stasis" simulating a right ventricular congestive failure. The thick pericardium covers the right auricle and great veins, while the cardiac apex may be relatively free. The surgical resection of the thickened pericardium has amazingly relieved some patients having this condition.⁷ The x-ray and electrocardiogram are of aid in diagnosing this condition. The heart shadow is ordinarily not enlarged or only slightly so. Cardiac pulsation may be free at the apex with no pulsation at the right border. Commonly and especially with cardiac congestion, the supracardiac shadow is wide. Pericardial calcification is an important sign, but often is absent and may occur in other chronic pericardial diseases.

Congenital cardiovascular malformations are difficult to diagnose clinically as well as by roentgenologic observations. The information gained from the radiosopic examination is rarely diagnostic, nevertheless, with the modern trend to determine specific defects it is of real value in all congenital cardiovascular malformations. After the history and physical examina-

tion the x-ray is of great importance and is of superior value to the electrocardiogram. In a consideration of an acquired or congenital lesion in any suspected child the disposition of the case cannot be complete without the use of the x-ray. Congenital defects may be present however, without any change or may give only vague information as to the causative factors of cardiac enlargement. The decreasing incidence of multiple complex congenital lesions and the increasing differentiation of the cardiac silhouette after infancy greatly enhance the value of the radiosopic examination.

Dextrocardia is the most important congenital malposition to recognize. The true or so-called "mirror type" shows complete transposition of the chambers, i. e., the left cardiac chambers on the right side, and is almost always associated with visceral transposition. The usual absence of other intrinsic congenital cardiac defects precludes a good prognosis. The isolated or false type anatomically has no true transposition; the heart is merely lying in the right chest with the left chambers to the left. It may sometimes be recognized by the left course of the aorta. Usually there are present associated cardiac congenital defects to alter the form of the heart and make the prognosis less favorable.

Abnormalities of the cardiac chambers with septal defects are the most common congenital lesions. Patency of the foramen ovale is of little import and the common small "anatomically open, functionally closed" defect discloses no roentgenological signs. If the interauricular septal defect is large and associated with other congenital lesions, or acquired valvular disease such as mitral stenosis, the heart is of enormous size. The pulmonary conus may be enlarged with a sharp definition of its branches in the lung fields. The heart may be globular with enlargement of the right auricular shadow and the aortic knob may be hypoplastic. Interventricular septal defect also commonly show no characteristic cardiac shadow. This lesion usually accompanies other congenital defects and if the heart silhouette is not entirely normal there may be a slight globular shape of the heart with enlargement of one or both ventricles or mild fullness of the pulmonary conus.

Patency of the ductus arteriosus produces no unequivocal diagnostic shadows, and in young children with a left basal systolic murmur, the

roentgen-ray may disclose only a slight or no pulmonary conus bulge. Later in childhood and when the murmur becomes more marked in intensity, or continuous in time, a characteristic shadow may be produced. The pulmonary arch pulsates, the conus bulges and the heart chambers are slightly enlarged. Occasionally in older children with wide patency one sees an area of density or pulsation under the aortic arch in the left anterior oblique view.

Pulmonary stenosis rarely occurs alone, and may show no characteristic shadow. Occasionally the pulmonary conus is dilated but may be normal or hypoplastic. Complicated pulmonary stenosis is usually associated with interventricular septal defect and right ventricular hypertrophy. The combined lesions with dextro-position of the aorta represents the most common multiple congenital defect and is known as the tetralogy of Fallot. This condition may be suspected roentgenologically by a cardiac contour simulating a wooden shoe or so-called *cœur en sabot*. The characteristic finding is a blunt and almost straight apical border forming an acute angle with the left diaphragmatic leaflet. This border is caused by the enlarged right ventricle displacing the left ventricle posteriorly and superiorly. The base of the heart is not full and shows usually a concave depression.

Coarctation of the aorta may produce mild left ventricular enlargement and pulsations of some degree of the ascending aorta. The erosion of the posterior and lower margins of the ribs is rarely seen in children, but in the older age group one may find this diagnostic sign. It is generally difficult to outline the aorta in the left anterior oblique position in young children and therefore the narrowing of the aortic arch may only be demonstrated in older children.

Congenital idiopathic hypertrophy of the heart is a very infrequent condition occurring during infancy, and is considered by some as a dubious entity. The radiological examination sometimes discloses an unsuspected cardiac enlargement. The silhouette is one of general cardiac enlargement with preponderant hypertrophy of the left ventricle and may be of such huge proportions as to almost completely fill the left lower chest.⁸

In conclusion, the visualization of the cardiac silhouette by the roentgen-ray, although not new, is now just beginning to be generally recognized as an important aid in the diagnosis of heart

disease in children. The radiologic examination usually gives but confirmatory evidence of heart disease, but may add useful and interesting information in the diagnosis, prognosis and management of the child with heart disease.

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W. L. Crawford (Rockford): I shall have time to comment only on two or three things. I want first to stress what Dr. Lawler brought out about cardio-thoracic shadows as a guide to heart disease. In talking to the general man, not the cardiologist or roentgenologist, I think it is a very good working rule, when you have the film in front of you and line it up and mark off the heart shadow, if you will space your ruler or whatever you are measuring with, with the spinal column and roughly divide the chest in half, that will give a fair idea of the upper limit of cardiac size. Dr. Lawler mentioned the fifty-two to fifty-five per cent. If the heart is larger than half the distance, be alert to look for some cardiac abnormality or disease. Where it is an A.P. or P.A. film, it is also important whether the child is absolutely straight on the film at the time it is taken. But I think it is a simple and homely guide that will stand one in good stead many times.

In the last of his paper, Dr. Lawler commented about avitaminosis, scurvy, glycogen storage and idiopathic hypertrophy. I think many of those things would have been grouped under idiohypertrophy of the heart ten years ago. Dr. White, of Boston, first brought it out. Others repeated it. You should be careful about making a diagnosis of common idiohypertrophy of the heart. Usually we have not been able to put it in the proper pigeonhole. Most of these have a better diagnosis than that if we can make it.

I would like to comment on the fact that the early infantile x-ray of the heart shadows is very apt to show this globoid appearance. It does not have the appearance of the elongated cardiac shadow shooting off to the left in children five or six months old, or even to a later age—sometimes several years.

I think sometimes we get into pitfalls if we do not

remember how the globoid appearance of the right auricle can be increased.

Dr. Crawford: Dr. Lawler said I would speak about dextrocardia. In the last few weeks I saw a baby about three weeks old. In talking to the father afterward he said, "What about that heart?" I asked what he meant and he said, "You know the heart is on the right side." I had already finished my examination and was rather on the spot. I went back and examined it and it was perfectly obvious the heart was not on the right side. The apex beat was over. I talked on the telephone to the x-ray man in the nearby town who had taken this film and asked him to send it. They had taken the film of the shoulder. They had an oblique picture and had shown this right auricle in the right side of the chest and it seemed somewhat like an apex. After you looked at it carefully you could see it was not. Because of that they made a diagnosis of dextrocardia and told the people about it, but further examination did not substantiate it.

MYXEDEMATOUS HYPOTHYROIDISM ASSOCIATED WITH PSYCHOSIS

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The mental state accompanying myxedema is one of retardation. The alternations of the skin, tongue, and lips, consisting of myxedematous swellings, produce an expressionless, swollen face and diminished ability of mimicry so that the patient appears stupid. The patient looks demented but there is no dementia. The swelling involves the tongue and mucous membranes, resulting in a thick speech, as though the speech mechanism were frozen. The gait is slow and clumsy. One must differentiate between psychoses with cardiorenal disease, involutional melancholia, dementia praecox, cerebral arteriosclerosis, organic brain disease, etc.

The psychic effects of hypothyroid deficiency, such as retardation, apathy, drowsiness, forgetfulness, irritability, etc., are seen as symptomatology. These phenomena are considered by Crile¹ to be due to decreased permeability of all the cells of the organism, leading to a decrease in nutrition and oxidation. Thommen² states that the symptoms are due to faulty nutrition

of cells and infiltration of various tissues with products of faulty catabolism.

Åkelaite³ states that in every case of myxedema not complicated by a psychosis there is a specific mental state characterized essentially by psychomotor retardation and fatigability. Since the patients appreciate their difficulty, they are apt to be depressed and irritable—this is dependent upon the degree of myxedema. He describes several stuporous cases characterized by clouding of consciousness with mild hallucinations, also cases with unsystematized delusions of persecution and excitability. Under appropriate thyroid therapy definite improvement occurred.

Karnosh and Stout⁴ describe four cases, and state that the age of the patient seems to modify greatly the reaction pattern, as do involutional and arteriosclerotic changes. Spontaneous myxedema, though it may occur at any age, is common in the involutional period of life, and this critical period seems to upset the equilibrium of the individual. Young individuals with myxedema, especially those with excessive schizoid personality, are prone to develop a vivid dissociation and hebephrenic regression.

Ziegler⁵ has observed that thyroid deficiency appears to have the effect of bringing into relief latent hereditary dispositional and constitutional tendencies. These predisposing factors are as varied in myxedematous individuals as in the general psychopathic population.

Although the diagnosis of psychosis with myxedema is rare, three cases have been observed at the Elgin State Hospital during the past few years. These cases are reported to emphasize some of the factors which may modify or determine the reaction pattern and course of the psychosis.

Case 1. A 38-year-old white woman, admitted 10/16/36. Family history negative for nervous and mental disease. Birth and early development normal. She had a common school education and worked as a maid until her marriage six years prior to admission. She entered a convent in 1923; remained three months, and was dismissed because of her strange behavior. She had four children, and was described as a rather reserved, quick-tempered, and domineering individual.

In 1926 patient developed symptoms of hyperthyroidism and a thyroidectomy was performed. Six months later the first mental symptoms were noted. She talked in a rambling manner continuously, paced the floors, wandered away from home, developed ideas against her father and demanded money to be given to

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From the Elgin State Hospital.

I wish to thank Dr. James H. Hutton, our consulting endocrinologist, for his helpful suggestions and aid in diagnosing these cases.

the poor. She became unmanageable and was taken to a sanitarium where she remained for three months and was classified as a case of dementia praecox. She improved, was sent home, and evidently made a good adjustment. She married, bore four children, and remained well until November, 1935, when she was hospitalized with recurrent symptoms of hyperthyroidism. On February 19, 1936, a subtotal thyroidectomy was done and the pathological diagnosis was that of "diffuse parenchymatous goiter with iodine involution."

On 10/13/36 the patient developed mental symptoms. She became disturbed, neglected her work, thought she was going to die and complained of pain in the stomach; wanted to go outdoors at two o'clock in the morning; said someone was going to burn the house down, stared into space, and so was committed.

Upon admission she weighed 186 pounds. Heart was slightly enlarged. She did not cooperate very well for the physical examination. Laboratory reports were negative.

The patient was very resistive, negativistic, and refused to get off the floor. At times she mumbled to herself in an inaudible manner. Tube-feeding was necessary on several occasions. A formal mental examination could not be made as she was uncommunicative. She was classified as dementia praecox, undetermined type.

After a few weeks stay a non-pitting edema of the ankles was noted, together with a swelling of the face. Blood chemistry and urinalysis reports negative. A tentative diagnosis of myxedema was made in February, 1937, and the patient was referred to the endocrine clinic, where the diagnosis of myxedema was confirmed.

Laboratory reports were as follows: Blood sugar was 67; N.P.N. 32; cholesterol 221. Erythrocytes 4,100,000; leucocytes 13,000; neutrophils 85 per cent.; lymphocytes 15 per cent. Glucose tolerance (1) 86. (2) 88.4. (3) 106.3. (4) 114.9. (5) 123.4. (6) 94.7.

The patient was placed on thyroid extract, grs. 3, daily; finally increased to grs. 4. Under this dosage the marked puffiness of the face disappeared; she became more alert and associated with others and assisted with the duties in the cottage. In May, 1937, the patient was apparently in good mental state. She appeared to be recovered from her psychosis; still received four grains of thyroid extract daily. Paroled on 5/27/37 and evidently adjusted quite satisfactorily and was discharged three months later as improved.

COMMENT

This woman's mental symptoms followed thyroidectomies. The psychosis evidently was similar to the reaction pattern of a schizophrenic. We know very little about the first attack but it also developed following a goitre operation. The patient had marked signs of myxedema, associated with a psychosis, and under appropriate thyroid medication she improved, both mentally and physically. Her B.M.R. was plus-16 at the time of her parole,

Case 2. A white woman, aged 49; admitted 5/14/37 because of auditory hallucinations. A brother died of tuberculosis; and maternal grandaunt was mentally deranged. Patient had an attack of dropsy several years prior to admission. She had a high school education and worked as a secretary until marriage at 26 years; and later bore four children. Was considered a friendly person who got along well with everyone.

Onset of mental illness occurred in 1925. At that time she would open the windows wide, dress in her coat and keep the gas burning to counteract the air coming through the windows. She said she did this to offset the "breath of poison" her husband was using on her. She seldom went outdoors. In 1929 after receiving care for a neuritis by a physician, she accused this physician of being the cause of her condition at that time; claimed that she was going to collect \$100,000.00 for the way he had treated her. When she fell downstairs, splitting her knee cap, she claimed that the physician was behind her, chasing her. She became more delusional; saw many pictures on the walls, calling them "silhouettes." Said her body had a disagreeable odor because the doctor gave her sheep's ovaries during her menopause, also the doctor had hypnotized her. She frequently heard the voice of this doctor and his wife, who at the time were dead, and talked back at them. For some time prior to her admission she had been unable to do her housework.

Upon admission she weighed 137 pounds; heart tones were weak and distant; blood pressure 130/90. There was a non-pitting edema of the ankles; loss of hair of eyebrows, eyelids and pubes, with a pale, dry skin. Blood sugar was 100; N.P.N. 30.5; creatinin 1.5. Urine showed a trace of albumin. Wassermann was negative; hemoglobin 67 per cent.; erythrocytes 3,550,000. B.M.R., 36%.

The consulting endocrinologist's report was as follows: "The skin is dry and shiny over the right forearm and hand. The skin over the rest of the body is quite dry and inclined to scale. Absolutely no hair on the forearms, legs, or in the axillae. The left brow is almost entirely gone. There is a narrowing of the palpebral fissure. Has typical myxedematous voice. recommend thyroid therapy.

Patient's speech was slow and she talked in a low tone, almost a monotone, making her conversation inaudible. She expressed numerous delusional ideas concerning the physician who had treated her many years ago for menopause. She said he had shriveled her until she resembled a mummy by giving her injections. Diagnosis "paranoid state (involution and hypothyroidism)." Thyroid extra, grs. 2, daily, induced nausea and palpitation, so the dosage was reduced to 1 gr. daily.

At the time of this writing the patient has shown improvement, physically. She has recently begun to sweat and to grow hair on her arms. Her voice is much higher in pitch and she volunteers the information that her tongue feels smaller. She is in good contact, superficially, but still hears voices calling her names. The B.M.R. is still -20 per cent and she

is to be tried on larger doses of thyroid again and is to be given antuitrin twice daily.

COMMENT

A woman of normal temperament, approaching the involutional period, developed a psychosis, characterized by poorly systematized delusions of persecutions, accompanied by physical and metabolic signs of myxedema. Appropriate medication improved her physical condition.

Case 3. A 44-year-old woman, admitted 2/17/32; single, domestic by occupation, and of limited education. Seventeen years prior to her admission she underwent a series of operations—appendectomy, ovariectomy and cholecystectomy—followed eight years later by a thyroidectomy. She suffered heart attacks from 1927-1932.

Onset of mental illness was noted in 1931 when she became quite irritable, was slow in movements, and unable to do housework. In 1932 she complained of dizziness, had fainting spells, was extremely tired, and unable to stand. In February, 1932, she "turned cold," seemed helpless, refused to talk or feed herself, "acted as if she were delirious," was depressed, and at times talked of dying.

Upon admission physical examination revealed a poorly nourished, anemic white female, weighing 104 lbs., height 64 inches. Subnormal temperature. The skin was pale, dry and scaly. Speech was thick. There were fine rales audible in both apices posteriorly. Blood pressure was 92/68; pulse 72; skin cold; reflexes normal. Erythrocytes 3,400,000; hemoglobin 61%; leucocytes 4,100. Blood chemistry was normal except for blood sugar of 58.8 mgs.; urinalysis negative; blood and spinal Wassermann negative. Phenosulphthalein test revealed output of 40% the first hour and 33% the second hour, or a total output of 73.3%. Ewald meal revealed a total acid of 17 with free HCL of 4. X-ray confirmed the diagnosis of incipient pulmonary tuberculosis.

During the mental examination the patient said that she was weak and complained of the numerous examinations. Orientation good. Memory fairly good except for a period of ten days prior to her admission to the hospital. General information poor. Calculation poor. Psychological tests revealed a Babcock deterioration rating of -4.1 with a vocabulary I.Q. of 95. Because of the slow, gradual onset, impaired responses to test, evidence of deterioration, and speech defect, she was classified as psychosis with organic brain disease. For about a year the patient was confined to the tubercular pavilion and ran an occasional after-noon temperature up to 99 degrees for a period of three months.

In 1934 she developed a severe menorrhagia but pelvic examination was negative. Mentally, she continued to be suspicious and irritable, refused to mix with people, and said she could not trust them. In 1935 she continued to be suspicious and paranoid, believing people were trying to make her unconscious. In 1936 she was irritable, complained of feeling tired,

and was sent to the hospital ward for a check-up because of pasty skin and weakness. Examination revealed coarse, black hair, nonpitting edema of lower eyelids and ankles. No other physical findings. B. M. R. was -42, confirming the impression of hypothyroidism with myxedema. Patient has been under thyroid continuously and now her B. M. R. is -20. A deterioration scale shows an index of -3.6 and a vocabulary I.Q. of 107. Her physical condition has also shown improvement.

CONCLUSIONS AND SUMMARY

1. Three cases of myxedema with psychosis are reported, and the variation in reaction pattern is attributed to differences in hereditary, constitutional, and environmental background, as well as organic conditions.

2. Young individuals who develop myxedema and who possess a schizoid personality are prone to develop schizophrenic psychoses.

3. Elderly patients with involutional and cerebral arteriosclerotic changes are apt to develop an organic psychosis, characterized by a loosely constructed paranoid delusional system, with confusion and vague hallucinatory experiences.

4. Appropriate thyroid therapy may improve the physical, and possibly ameliorate the mental condition.

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DISCUSSION

James H. Hutton (Chicago): The interesting thing to me is that while endocrinopathies in general are extremely widespread in Elgin, and I believe in other institutions also, hypothyroidism is a relatively infrequent finding. The number of cases reporting hyperthyroid states are even more infrequent. I have seen only two or three in the last seven years out there.

Undoubtedly the level of thyroid function has a profound influence on the mental as well as the physical state, the hyper state associated with the speeding of mental processes and the hypothyroid level with the retardation. I wish Dr. Simon could have shown pictures of patients he described. It would have brought out the ease of diagnosis in some cases and

the great difficulty in others. If I recall one of the cases correctly, the diagnosis could be easily made. It was a typical picture of myxedema; whereas the picture Dr. Wiltrakis showed did not look like hypothyroidism.

Quite low basal rates are found not in association with hypothyroidism. Low basal readings may be found with other endocrinopathies, particularly pituitary or adrenal insufficiency. Or the rate may be quite normal where the thyroid level is quite low. So the basal rate presents only one factor in the diagnosis and one cannot make the diagnosis dependent on one factor alone.

At Elgin we followed the blood cholesterol in several cases. In only a few cases as the level of the thyroid function went down, the blood cholesterol went up. Where you do find a high cholesterol level, it speaks for hypothyroidism but it may be present without that. The dosage of thyroid in these cases is one that can be determined only by trial. Frequently patients with basal rates of minus 30, obviously due to hypothyroidism, are yet able to tolerate doses perhaps not more than two grains per day of thyroid. The patient with a normal rate, the thyroid deficiency being combined with pituitary deficiency, may be able to take three times that much.

The best procedure is to start out with a relatively small dose and increase or decrease the dose about every five days until the patient's tolerance is found. The final test of all these things is whether the patient takes thyroid well and gets better; not better mentally because he may not, but better physically.

I have seen cases that were mistaken for hypothyroidism because of a low rate, asthenia, slow pulse and a low blood pressure, and yet they were not cases of hypothyroidism, or at least the thyroid was a relatively innocent factor in the case. They had a pituitary and adrenal deficiency. Those two things will produce readings quite as low as any hypothyroidism I know about. A therapeutic test is usually the thing that will tell whether the thyroid is at fault. If it is, the patient will tolerate a reasonable amount of thyroid and as the B. M. R. approaches normal, he coincidentally will feel better. If it is due particularly to adrenal deficiency he will feel much worse long before the basal rate approaches normal. He will have heart consciousness, be nervous, and generally feel much more miserable. In these cases Dr. Wiltrakis followed, these patients physically were much better. I think these myxedema cases were also better mentally.

Unfortunately while endocrinopathies in general are extremely common, in at least one institution, correcting the endocrinopathy does not always favorably influence the mental state. They may be as disturbed mentally when the endocrinopathy is corrected as before treatment was presented.

Freshman (preparing an essay): "What do they call those tablets the Gauls used to write on?"

Roommate: "Gaul stones."—*Kentucky Grocer*.

CERVICAL FASCIAE AND INFECTIONS ABOUT THE NECK

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CHICAGO

This paper merely attempts a brief review of the anatomy of the neck with especial regard to the progress of suppurative processes as affected thereby. Much has been written in this field and on this subject and it is in the belief that repetition is one of the surer paths to true knowledge that this topic is given. The varied anatomical descriptions given the fasciae of the neck and their multiple classifications is evidence of their rather complicated structure. The fact that one of the most difficult cases to diagnose and handle is pus in the neck; that fatalities still occur, that the neck is an admittedly difficult surgical area—all serve to make this a problem of never-ending interest. Though a bibliography is appended, no attempt is made to credit the various works individually. Quotations are not used, since many of the authors mentioned have borrowed from one another. Some of this work is original in that the drawings shown are free-hand taken from specimens of horizontal serial sections of the neck and head in the anatomy laboratory of Loyola University.

If one does not overburden himself with pseudodescriptive terms and too-detailed an inquisition into the fasciae and compartments of the neck, a clinical understanding and application is easily made out. This is readily seen if, in our primary division, we divide the neck into an anterior or visceral half and a posterior or muscular half. This is best viewed in the section through the fourth and fifth cervical vertebrae, which almost every textbook shows in describing the cervical fascia, and which most of you are familiar with.

It will be seen here that the so-called prevertebral fascia binds together the muscles immediately about the cervical spine, and at this level separates them from the inferior constrictor muscle; this creates a potential space.

The Retropharyngeal Space. The extent of this space and the avenue it presents for the spread of infection may be seen if one carefully disarticulates the head from behind and carries the section forward through the prevertebral

fascia to the retropharyngeal space, when the head will topple forward and downward, carrying with it the anterior or visceral half. This space extends directly downward into the mediastinum and is filled with loose areolar tissue in which are embedded the retropharyngeal lymph glands which, in children at least, are so prone to break down with the production of an abscess. Since this is separated from the pharynx only by mucous membrane and the constrictors, spontaneous perforation is frequent; or the examining finger, in palpating the posterior pharyngeal wall for fluctuation and diagnosis, ruptures the abscess. If incision in the posterior pharyngeal wall is required it is performed without anesthesia—the child merely being wrapped in a sheet and inverted immediately after incision to prevent aspiration of the pus, although use of a mechanical aspirator will obviate the need of this procedure. An external approach into the retropharyngeal space may be had through its side, where the carotid sheath, together with a prolongation of fascia anteriorly, called the *alar fascia* definitely walls off any lateral extension of pus confined in this area.

This approach calls for an incision along the anterior border of the sternocleidomastoid muscle, below the level of the hyoid bone, and extending a sufficient distance downward (usually to about the level of the cricoid). The sternocleidomastoid muscle and carotid sheath are retracted laterally putting the alar fascia on the stretch, which in this area, i. e., below the hyoid, is practically devoid of vessels. Blunt dissection through this fascial sheet introduces one immediately into the retropharyngeal space.

This same approach, with the incision extended further downward, and with division of the posterior belly of the omohyoid, may be used in inspection as low as the third thoracic vertebra or, for example, for delivering foreign bodies impacted in the esophagus. From the previous slide it will be seen that pus from a cervical caries or Pott's disease is not located in the retropharyngeal space, though it may penetrate the prevertebral fascia and be evacuated, as described above, for true retropharyngeal abscess. It may, however, burrow downward in the midline, keeping beneath the prevertebral fascia, until it becomes mediastinal in location or, as is quite frequently the case and explained by this next slide, follow the lateral extensions of the prevertebral

fascia over the scalene muscles, and present a bulging in the posterior triangle of the neck which may be incised and drained to advantage in this region, since secondary contaminating organisms are more easily controlled than is the case in an incision in the pharynx.

Since the attachment of the prevertebral fascia superiorly is to the occipital bone (about the insertion of the longus capitis), it follows that the pointing of an abscess from the petrous apex into the pharynx would be anterior to the prevertebral fascia or in the retropharyngeal space.

The carotid sheath is a condensation of connective tissue about the great vessels in the neck and represents a line of fusion of the three major fascial layers of the neck. It is often depicted as the stem of a trifolium in which the leaves are the potential spaces which so frequently are the sites for the accumulation of pus in cervical infections. This is not entirely true, for the carotid sheath cannot be likened to a hollow stem or tube, though pus under great pressure in the above-mentioned spaces may, by perivenous extension, extend to and down the internal jugular vein.

The parapharyngeal, lateral pharyngeal, or pharyngo-maxillary space, as it is variously called, is the most commonly found infected of this group. Etiologically, local tonsillectomies are often concerned, since parapharyngeal space abscess is the most frequent complication of its class following this popular surgical procedure. This space is bounded

Internally, or medially, by the superior constrictor muscle of the pharynx and its associated buccopharyngeal fascia;

Externally, or laterally, by the internal pterygoid muscle, the parotid gland, and the ascending ramus of the mandible;

Anteriorly the sub-maxillary gland;

Posteriorly the stylopharyngeus muscle and fascia covering the great vessels and nerves;

Superiorly the floor of the skull; and

Inferiorly it diminishes in size to a point or apex continuous in the carotid sheath at the level of the greater cornu of the hyoid bone.

Descriptions of the space vary; some including the great vessels in the compartment, but dividing it into two halves—an anterior in which the pus is found, and a posterior separated from the anterior by the styloid process and attached muscles and ligaments, and containing the great

vessels. Of clinical importance is the fact that it lies at the level of the tonsil and so, besides causing external swelling behind and below the angle of the jaw, usually displaces the tonsillar fossa, pillars uvula, etc., medianward, much in the same fashion as a peritonsillar abscess. Relief by surgical drainage may be accomplished by

Internal drainage—usually effected by thrusting a curved blunt hemostat through the tonsillar fossa. The advantages over external drainage are cosmetic, but are often outweighed by; the patient's inability to open the mouth due to trismus produced by direct irritation of the internal pterygoid by the abscessed space; the difficulty or impossibility of controlling hemorrhage, great or slight; the tendency of the opening to close before drainage is complete.

External drainage may be effected by a skin incision over the greatest point of swelling; location of the abscess by an aspirating needle; and then blind, blunt dissection until pus is reached, when a tube may be inserted. Other techniques include an incision just below the border of the mandible, ligation of anterior facial vein to permit rolling the submaxillary gland up out of the way on the mandible, and blunt dissection medialward into the parapharyngeal space. Another mode of access is through an incision along the anterior border of the sternocleidomastoid muscle which, on lateral retraction, exposes the carotid sheath. A gloved finger carried up the sheath will find the abscessed parapharyngeal space.

The other two spaces depicted by the trifolium are the

Submaxillary space and the

Parotid space—both of which are formed by a splitting of the outer investing or vaginal layer of the deep cervical fascia, which also splits to enclose the sternocleidomastoid and trapezius muscles.

The submaxillary space is complete, and when found to be housing pus, usually represents an abscess of the salivary gland itself and may be demonstrated by milking pus through the duct opening in the floor of the mouth. Relief is found only in total extirpation.

The *Parotid space* besides containing the salivary gland also includes some superficial or preauricular, and some deep lymph nodes. The medial or internal layer of its fascial layer is in-

complete superiorly and permits communication with the parapharyngeal space, but inferiorly reinforcement presents a strong band known as the stylomandibular ligament which very effectively separates the parotid from the submaxillary space.

From the above it is readily seen how an exposure of the carotid sheath, through an incision along the anterior border of the sternocleidomastoid at the level of the hyoid bone, serves a double purpose i.e., it allows easy and almost blind access to the three spaces and at the same time permits inspection of the internal jugular vein which may be thought to be thrombosed.

An additional space—the *Suprasternal space*, or space of Burns, is found low in the neck as a communication between the space on either side formed by the splitting of the investing layer of fascia about the sternocleidomastoids.

It is of little surgical importance, containing the terminations of some smaller cervical veins, viz., the anterior jugulars, external jugulars, transverse cervical, etc.

A space of more importance is the so-called *Subvaginal space*, found directly beneath the investing layer in the posterior triangle, and beneath the sternocleidomastoid muscle in the lower part of the neck. It does not extend into the anterior triangle, nor do the two spaces communicate across the midline. They communicate, across the midline. They communicate, in pressure experiments, behind the carotid sheath with the retropharyngeal space. The importance of this space lies in the large number of lymphatic glands it contains.

The *parapharyngeal*, lateral pharyngeal, or fascia is a rather ill-defined layer which, at its middle, is attached to the hyoid bone and an oblique line on the thyroid cartilage. Superiorly it covers the muscles forming the floor of the submaxillary triangle, and so gains attachment to the mylohyoid ridge. Inferiorly it is continued over the infra hyoid group of muscles, the trachea, esophagus and thyroid down into the mediastinum. That portion covering the infrahyoid musculature is attached anteriorly to the manubrium sterni, and laterally it is continued over the posterior belly of the omohyoid to the attachment of that muscle on the superior border of the scapula. The space formed between it and the outer investing layer is demonstrable for the most part above the hyoid only

where it contains the submaxillary and submental groups of nodes. This explains too, cases of so-called Ludwigs angina, or abscesses about the base of the tongue originating above the mylohyoid line which, spreading downward, involve the mediastinum if they succeed in passing the general partition which the hyoid bone, together with its muscular and fascial attachments makes, separating the neck into upper and lower halves. It may be pointed out here that the hyoid bone is the agent by which the visceral structures are slung between the styloid process and mandible above, and the sternum below, by virtue of the supra and infrahyoid strap muscles.

External to the investing layer of deep fascia is the superficial fascia containing the platysma, the external jugular veins, and a quantity of fat and lymph nodes. Pus here reaches the surface with ease, and is represented principally by the suppurative lymph adenitis found especially in childhood and observed but rarely in adults. Posteriorly, numerous fibrous septa so divide and fix securely this subcutaneous element that it is a favorite site for carbuncles when solitary localization, relieved by a small single opening, is entirely inadequate.

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DISCUSSION

Dr. Carl Christoph, Chicago: After listening to Dr. Kerwin's excellent paper, I do not believe that there is much further to be said on "The Suppurations of the Neck" so far as anatomy is concerned. The doctor has done a lot of work on the subject and I am sure he has cleared up a lot of questions as to anatomy as well as nomenclature of the structures of the neck.

I should like to mention, however, in connection with the deep infections of the neck, that the most dreaded complications are edema of the larynx and mediastinitis. Treatment is divided into medical and surgical. In medical treatment, sulphanilamide and prontosil have come into use recently, and x-ray applications are very valuable. One drug that we do not hear so much about is calcium gluconate. I think we have saved many lives with its use, intravenously and intramuscularly. We now do fewer tracheotomies.

Concerning the infection that travels along the deep fascia into the mediastinum, in my opinion surgery is indicated. Together with the leucocyte count, the temperature variations, etc., the most important point is the deep tenderness over the vessels and the posterior border of the thyroid gland. Of course, an exact knowledge of the anatomy is necessary in order to do this surgery.

Dr. Lindon Seed, Chicago: Dr. Kerwin has presented a useful and accurate description of the fasciæ of the neck. Most operations for infections of the neck are blind affairs. Usually one cannot find the fascial planes or the anatomic landmarks; all that he encounters is granulation tissue, blood and trouble. Because the opening of an abscess is largely a blind procedure, knowledge of the involved anatomy becomes more necessary than usual. If one walks about a room with his eyes open he does not need to know the position of each and every structure within it. If he walks about it with closed eyes it is imperative that he know it exceedingly well.

As a matter of convenience I divide infections of the neck into two main groups: first, the superficial infections arising from a suppurative lymphadenitis, usually not serious, and second, the deep infections, which may be divided into those involving the floor of the mouth and those in the central portion of the neck. The group involving the floor of the mouth can be again divided into three types: 1. Those which lie beneath the mylohyoid muscle and present in the submental region. These are drained through a transverse skin incision near the hyoid bone and a longitudinal incision through the geniohyoglossus muscles. 2. Those which present in the submaxillary region. These require a lateral transverse incision below the jaw margin, and the submaxillary will have to be either elevated or removed to drain the pus which lies on its medial aspect. In this operation all anatomic landmarks must be recognized. 3. Those which present at

the angle of the jaw. Usually an infection in this situation is due to a relatively superficial suppurative adenitis rather than a parapharyngeal space infection. If there is much involvement of the pharynx with trismus and difficulty in swallowing or breathing, the latter is more likely. Drainage can usually be accomplished by jamming the finger or a closed forceps rather blindly into the area between the bony tip of the styloid process and the angle of the jaw.

Deep infections of the central portion of the neck are uncommon. Those that arise about the esophagus descend rapidly into the mediastinum and demand an emergency operation as soon as they are recognized. The others behave much as abscesses elsewhere; that is, they localize fairly well and are opened when one is reasonably sure that pus is present. The fear that they will spread into the chest cavity is probably exaggerated.

The individual covers all of the types of infection of the neck. Experience in the field is divided betwixt the pediatrician, the general surgeon, the dentist, the oral surgeon and the otolaryngologist. The experience of any one of these is quite different from that of the others. Most of the infections are easily handled; a few are not. The latter infections rightfully belong to the nose and throat surgeon, although they more frequently do not reach him. For this reason I think the presentation was appropriate as well as informative.

Dr. R. W. Kerwin, Chicago (closing): I want to thank all the discussors. I did the procedures suggested by Dr. Christoph yesterday before we left, which were to use both x-ray and sulfanilamide, and to see one of these phlegmonous processes subside partially at least in about six or eight hours' time following the therapeutic dosage of x-ray.

Dr. Seed has not told all he could about deep neck infections. I have listened to him on several occasions and I am sure some of his points would interest you if time allowed. One point about which we make a mistake is not using the collar type of incision. Even in the midline, instead of a vertical incision make a cross incision and raise a flap. The resultant scar is much nicer and does not string out. I am sure he could enlighten us on many more points.

SPONTANEOUS SUBARACHNOID HEMORRHAGE

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Spontaneous hemorrhage into the trabeculated space occupied by the cerebrospinal fluid produces a syndrome distinct enough to be regarded as an entity. It occurs with sufficient frequency for every practitioner to expect to see more than an occasional isolated case. The resulting clinical picture is so striking and so easily recognized and

the tentative diagnosis so easily confirmed by spinal puncture that everyone should be acquainted with the known facts. Last but not least, proper treatment is effective.

The first description of such cases was probably that by Wilks¹ in 1859. However they were not recognized ante mortem before Quinke introduced the spinal puncture in 1891 and the clinical diagnosis was seldom made before the turn of the last century. Since then a considerable literature has developed so that at the present time we have a fairly complete idea of the mechanisms involved.

Although spontaneous subarachnoid hemorrhage undoubtedly occurs more frequently than is generally appreciated, few statistics on its incidence are available. Leopold² reported only three cases from the University Hospital in Philadelphia in 1929. On the other hand, Ohler and Hurwitz³ reported twenty-four cases from the medical services of the Boston City Hospital in a period of eighteen months. During the same time there were twenty-two cases of subacute bacterial endocarditis and three hundred and fifty-three cases of cerebrovascular accidents of all types. These figures are very close to ours: six cases of subarachnoid hemorrhage, seven cases of subacute bacterial endocarditis, and ninety-four cases of cerebrovascular accidents, taken from our office records between January 1927 and December 1937. It would seem then that spontaneous subarachnoid hemorrhage has about the same incidence as subacute bacterial endocarditis and about one-fifteenth of that of ordinary cerebrovascular accidents.

The adjective "spontaneous" excludes from discussion all cases of subarachnoid hemorrhage resulting from trauma, infection, inflammation, blood dyscrasias, tumors, nevi, epilepsy, etc., because in most of these cases the reason for the hemorrhage is obvious. However it is in no sense to be regarded as the equivalent of the term "idiopathic" because in every case there is a definite underlying pathological process. This process always consists of disease or degeneration of the cerebrospinal arteries per se. Furthermore the word spontaneous is well chosen because the hemorrhage usually makes its appearance suddenly and dramatically, without evident cause, in a person previously in apparent good health.

Etiologically the cases fall roughly into two groups. In the younger group the hemorrhage

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is usually due to a congenital aneurysm or defect in the vessel wall. In the older group it is usually due to arterial disease or degeneration in which hypertension is often an important factor. In the great majority of cases the hemorrhage occurs from the rupture of an artery at the base of the brain, usually in or near the circle of Willis. There are several reasons for this. In the first place these vessels have the same thin walls as the intracerebral arteries, due chiefly to attenuated muscular and connective tissue coats. At autopsy they appear thin and collapsed and almost as transparent as though made of cellophane. In the second place they are literally suspended in a large fluid space, unaccompanied by veins and without any of the customary support of surrounding structural tissues. In the third place they are of relatively small caliber and in the fourth are so arranged that their junctural points produce almost right-angled channels which must bear the brunt, especially at the emergence of the left carotid, of forceful impulses transmitted in almost a straight line from the left ventricle.

The importance of intracranial aneurysms as the source of subarachnoid hemorrhage is becoming more and more apparent with each pathological study.^{4, 5, 6, 7} These dilations usually occur on the larger or medium-sized vessels at the base and almost always at their points of bifurcation where the pressure of the pulse wave is the greatest. They vary in size from the fraction of a millimeter to a centimeter or more in diameter. In young people with normal vessel walls Wiley Forbus⁸ has shown that they are due to a muscular defect in the media which occurs at the points of bifurcation. This form, then, is an acquired lesion arising from a congenital defect in the muscularis. In older persons the usual cause is arteriosclerotic changes which have destroyed the elastic layer. Such aneurysms were demonstrated by Straus, Globus and Ginsberg⁹ in nine out of eleven autopsied cases. It is obvious that either type of lesion may lead to rupture of the involved vessel before an aneurysm has developed. The point is that the study of autopsy material shows that the defect usually leads to aneurysmal dilatation before it does to rupture.

Syphilis does not seem to be an important etiological factor probably because the changes it usually produces in the smaller vessels are those of an obliterating endarteritis which is more

likely to lead to thrombosis than to rupture. Certain it is that evidences of syphilis are lacking in the great majority of the cases reported in the literature. However in some cases intense inflammation may result in areas of necrosis which may rupture before the vessel has had time to thicken. Such changes occur most frequently in the superficial cerebral vessels in cases of dementia paralytica where repeated bleeding produces typical chronic internal hemorrhagic pachymeningitis.^{10, 11, 12}

The causal relation of exertion immediately preceding an attack is of considerable interest. Active straining exertion does raise blood pressure. Thus if there is a pre-existing defect in one of the vessels such a strain may precipitate bleeding. The same may be said to a less extent of nervousness and excitement. The practical importance of this factor is obvious from a review of the cases reported in the literature. In almost all of them the bleeding occurred during the day and in the majority during periods of exertion, strain or excitement. Very few developed during periods of rest or relaxation.

Following the introduction of blood into the cerebrospinal space there begins a reaction in the meninges which is similar to that following bleeding into any other serous cavity. It is, in fact, a sterile meningitis due to the irritating effect of the blood and the products of hemolysis. As diffusion is usually rapid the reaction is usually general but varies with the amount of blood present and the length of time it is there. It tends to subside and disappear as the blood disappears from the fluid. At first there is hyperemia, edema and slight polynuclear infiltration. After a few days the polynuclear cells are replaced by round cells and finally, unless the irritating blood is removed, there is a proliferation of fibroblasts. After several weeks most of the cells disappear but if the reaction has been at all severe or continued there remains a considerable amount of fibrous tissue. Late in the course of the meningeal reaction mild inflammatory changes may also be observed in the structure of the cortex. In extreme cases where the inflammatory reaction has persisted in sufficient intensity to interfere with the absorption of the cerebrospinal fluid there may be some dilatation of the ventricles.¹³

The symptoms immediately following the escape of blood into the subarachnoid space are

due to increased intracranial pressure; the later ones to the inflammatory reaction of the meninges. Naturally they depend upon the size and rapidity of the extravasation. This may consist of simple leaking, continued or alternating oozing or a more or less large spurting hemorrhage. However, because of the nature of the pathology the onset is always definite and usually sudden. No condition in medicine is more characteristic or more dramatic than the average case. An individual in his ordinary health is stricken with a sudden, violent, vise-like headache which is followed in short order by dizziness, photophobia, nausea, vomiting and collapse. On examination there is rigidity of the neck and back and limitation of straight leg raising, without gross evidence of cerebral localization. With large hemorrhages there are often convulsions and unconsciousness. With smaller hemorrhages the initial symptoms are followed by dullness, drowsiness and delirium. When the hemorrhage is slight the most important symptoms develop after an interval of a few days and are due to the reaction of the meninges. In those cases where a slight localized leak precedes the real bleeding prodromal headaches and even local neurological findings may be present for a few hours or even days. Even with small hemorrhages there is sometimes a brief loss of consciousness which has been attributed to the actual shock of the vessel rupture, comparable to the brief unconsciousness which may occur in cerebral concussion.

The meningeal reaction begins within a few hours. Its manifestations are those of a low grade meningitis and appear directly on the heels of the initial symptoms. There is headache, drowsiness, a tendency to confusion or delirium, elevation of temperature and pulse and postcervical rigidity and positive Kernig signs. There is also a leucocytosis, usually mild but occasionally marked. For some reason Korsakoff's syndrome tends to be present in most of these deliriums to a greater or less extent. This has been suggested as a diagnostic point¹⁴ as it is not often observed in other types of intracranial hemorrhage. The reflexes vary and may be hyperactive, reduced or absent. In some cases examination of the fundi may show papilledema or hemorrhages. The urine occasionally shows albumin and glucose. One case was seen because the question of diabetic coma was seriously con-

sidered. The presence of glucose in these cases may be the result of a mechanism similar to that occurring in Claude Bernard's classic punctures of the fourth ventricle. These manifestations gradually subside as the blood is absorbed.

The course of the disease like its symptoms depends upon the size and duration of the initial hemorrhage and whether or not this is followed by oozing or renewed bleeding. Recurrence of bleeding with coincident recurrence of signs and symptoms is fairly frequent. This may occur during the initial attack in the character of a relapse or it may take the form of repeated attacks after a period of convalescence or after apparent full recovery. However, most of the recurrent hemorrhages occur within a few days of the initial bleeding, that is, before the clot in the rent has had time to organize. Several such recurrences may occur before a final fatal attack. Small amounts of blood are undoubtedly absorbed in one or two weeks. Larger amounts may take two or three times that long. The meningeal reaction naturally takes much longer to subside, often persisting for several weeks after the spinal fluid has become free from blood.

The diagnosis of spontaneous subarachnoid hemorrhage is usually easy provided the condition is thought of and a spinal puncture done. The great majority of cases occur in people who have regarded themselves as well and the sudden onset of severe headache followed by vertigo, nausea, vomiting and collapse, accompanied by cervical rigidity and Kernig signs and the almost total absence of manifestations pointing to focal disorganization of the central nervous system leaves little doubt as to the condition present. Such a picture demands lumbar puncture just as certainly as hematuria demands cystoscopy. The spinal fluid is under pressure, is uniformly pink to dark red or orange in color, depending upon the amount of blood present, and on settling or centrifuging the supernatant fluid is xanthochromic. Hemolysis begins in a few hours after the initial hemorrhage so that, unless puncture is done immediately, some xanthochromia is always present. Subsequently this becomes more and more marked and if the puncture is not done until late the fluid may no longer be bloody but only xanthochromic. At first the number of leucocytes is proportional to the number of red cells, then the number becomes slightly increased,

at first from an increase in the polynuclear cells, later from an increase in the lymphocytes.

Traumatic blood in the spinal fluid from the puncture itself is usually easily distinguished. It is not evenly mixed with the fluid. The first tube is the darkest and if enough blood is present it will clot. Successive tubes become lighter and lighter. Finally the supernatant fluid is always clear. As a matter of fact, hemorrhage from spinal puncture is really quite uncommon. It can only occur if the needle is pushed too far and so strikes the venous plexus on the anterior wall of the vertebral canal.

The diagnosis may be further contributed to by the history or knowledge of previous attacks, or of hypertension, or the presence of general arterial disease. However some caution must be used in interpreting the blood pressure readings at the time because hypertension is an almost invariable response to increased intracranial pressure.

The identification of the nature of the vascular defect producing the hemorrhage is difficult and often impossible and yet it should be considered. In older people with evidence of arteriosclerosis and a history of hypertension the presumption is that it is due to the rupture of an arteriosclerotic vessel. In younger individuals with normal vascular systems the presumption is that it is due to the rupture of an aneurysm. In the postmortem room aneurysms of one or more of the cerebral arteries is a relatively common finding, probably occurring in about one per cent. of the cases in which they are sought, and yet in the past when considering at the bedside the causative possibilities in a given patient such aneurysms have rarely been suggested. Because of the easy compressibility of adjacent structures intracranial aneurysms which do not rupture seldom give rise to "tumor" symptoms but because so many of them do rupture they cannot be said to be entirely asymptomatic. From the standpoint of hemorrhage it may be said that they tend to give rise to longer prodromal symptoms, especially headache which is often unilateral and may be of some localizing value; that bleeding is often accompanied by focal signs, particularly palsies of the extrinsic ocular muscles; that changes in the optic fundi, particularly hemorrhages about the disk, are common; and that multiple seizures at varying intervals usually precede the fatal issue. Such diagnoses

have been made in the past and there is no reason why they should not be made more frequently in the future.^{7, 15}

Spontaneous subarachnoid hemorrhage may be confused with almost any lesion of the brain from meningitis to tumor. Slight hemorrhages with indefinite clinical manifestations often precede large or fatal hemorrhages and hence must be considered in the differential diagnosis of any obscure lesion of the brain. In some cases the disturbances due to the blood in the cerebrospinal fluid must be cleared up before the primary lesion can be recognized. Ordinarily the chief difficulties arise in attempting to differentiate intraventricular hemorrhage, cerebral hemorrhage which has ruptured either into the ventricles or through the pia into the subarachnoid space and traumatic meningeal hemorrhage. In the latter condition the history is all important, in the former evidence of cerebral localization may be the only distinguishing feature. In comatose patients it is usually impossible to differentiate a large subarachnoid hemorrhage from a cerebral hemorrhage which has ruptured into the ventricles or into the subarachnoid space. Such cases are indistinguishable except at autopsy.

The prognosis in spontaneous subarachnoid hemorrhage must always be guarded. The average mortality of the cases reported in the literature is between 40 and 50%. The usual cause of death is increased intracranial pressure. With large hemorrhages death may occur quickly but it is never instantaneous. In cases which have recovered there is always the possibility that they may bleed again. On the other hand, it must be remembered that the literature naturally abounds in cases which have been completed by autopsy and from our experience, at least, it would seem that the average case has a better outlook. The majority of the young or relatively young, uncomplicated cases recover completely and remain well. In general it may be said that the prognosis is twice as bad in the older as in the younger group, that it is worse in proportion to the associated disease and that it is worst of all with hypertension. In gauging the individual case the most valuable guides seem to be the depth of the coma and the other evidences of increased or increasing intracranial pressure. All of our patients have been followed to April of this year. All are living and none

have had recurrences. Four are perfectly well as far as their original condition is concerned after intervals of one and one-half to six and a half years (Nos. 1, 2, 4, 6). One (No. 3), the only syphilitic, was symptomatically well and working after five years. One (No. 5) has since had a hemiplegia.

Treatment has three objectives: control of the bleeding, relief of intracranial pressure and removal of the irritating blood. In every case two stages must be observed because they require different management. The first stage is the period where the bleeding is actively proceeding. The second is that after the bleeding has stopped.

During the stage of active hemorrhage the patient should be kept rigidly recumbent with the head and shoulders slightly raised and under the influence of sufficient sedatives to insure absolute quiet. Here morphine is undoubtedly the sedative of choice as it is in other types of internal hemorrhage. The neck should be kept straight and free from any pressure. The rise in the intracranial pressure due to the slightest pressure on the jugular vein of one side, as seen in the Queckenstedt test, is instantaneous and gives a very obvious reason for these directions. If the blood pressure becomes very high intravenous injections of fifty per cent. glucose or succrose may be used or venesection may be tried, though the latter is theoretically dangerous since it may reduce the pressure in the cerebral veins below that in the cerebrospinal fluid. During this stage the increased intracranial pressure is protective and spinal puncture should not be done as sudden lowering of pressure may result in renewed hemorrhage. However, if the rise in the intracranial pressure continues and seems to threaten life, spinal puncture may be done despite its dangers as an emergency measure. The headache, mental state, blood pressure, slowing of the pulse and papilledema are the guiding factors determining the need and frequency of these procedures.

As soon as it is felt that bleeding has stopped spinal puncture should be done and the fluid removed slowly. Any spurting should be quickly controlled with the stilette. It is not wise to remove too much fluid the first time. If a manometer is available it is well to stop when the original pressure has been reduced about one-half. Subsequently this should be repeated every twenty-four to forty-eight hours depending upon

the relief afforded, the pressure the fluid is under and the amount of blood present. Taps should be continued until the fluid is normal. It is probable that the late dangers of chronic arachnoiditis, such as persistent headache, mental changes and epilepsy, are not great and that absorption of some blood always takes place, but it is obvious that every effort should be made to drain off the free blood as rapidly as possible and thus prevent or reduce the resulting meningeal irritation and subsequent inflammation. If this cannot be accomplished by puncture alone the more radical procedures of decompression should be considered.

It is interesting to note the type of headache from which relief can be expected by puncture. This is usually occipital in position and though it may be spoken of as pain, is, on closer analysis, more of a feeling of intense pressure or numbness. The more neuralgic types of headache are usually the results of meningeal irritation and are not much relieved by puncture.

The necessary period of complete quiet in order that the rent in the vessel may completely heal may be arbitrarily placed at about six weeks. During this time as well as subsequently there can be no doubt that it is supremely important to keep the blood pressure as low as possible. Any strong or straining exertion should be intradicted indefinitely.

CASE REPORTS

No. 1 (16,062). A housewife, age 47, who had gotten up at 1 A.M., August 9, 1931, to watch a noisy party next door, fell unconscious. She roused a half hour later to complain of "terrible" pain all over her head and down the back of her neck. She vomited several times. Her physician made a tentative diagnosis of epilepsy, gave her a hypodermic and retired from the case. When seen in the afternoon she was drowsy, with a definitely stiff neck and questionable Kernig signs. Blood pressure 155 systolic and 85 diastolic. Arteries normal. The margins of the right disk seemed slightly blurred. On the 10th she was worse, with a very stiff neck and legs and slight mental confusion. Spinal puncture on the 11th gave a uniformly dark red, bloody fluid containing 200,000 red cells and 42 white cells per cmm. Serological tests for syphilis were negative. On the 17th the fluid was slightly less bloody, containing 75,000 red cells and 330 white cells per cmm. On the 22nd the fluid was clear, light yellow in color and contained 11 cells. Her temperature, which had ranged between 101 and 102, dropped to normal, but she remained weak and confused, with various aches and pains and a mild delirium during which she took innumerable imaginary jounries. During the latter part of September she

had an unexplained temperature of 103 to 104 for two weeks. She was discharged from the hospital in good condition October 29th. In 1933 her blood pressure varied between 175 and 206 systolic and 100 and 120 diastolic. In 1937 she began to have mild anginal attacks. When last seen in March, 1938, she felt quite well except for a recent cold. Her pressure was 150 systolic and 82 diastolic.

No. 2 (St. John's 139,324). A single American girl was sitting on the parlor sofa with her beau on the night of October 28, 1932. In moving about, she seemed to bump her head slightly and immediately complained of severe headache which was followed quickly by nausea, vomiting, faintness and unconsciousness. A few hours later she roused but was restless, slightly confused and continued to complain of pain in her head and neck. She was admitted to the hospital November 1st and seen in consultation on the 3rd because her condition had not improved and because her urine contained five per cent glucose and four plus acetone and diacetic acid, which suggested the diagnosis of diabetic coma. Examination showed a drowsy, slightly delirious young woman with a very stiff neck and marked limitation of straight leg raising. Except for absence of reflexes the remainder of the examination, including the fundi, was normal. Her temperature had averaged about 100. The leucocytes were 9,200. A blood sugar 91 mgm. %. Spinal puncture gave a pink fluid under pressure which showed 750 red corpuscles per cmm. There was rapid improvement. Another puncture was done on November 5th and she was discharged on November 11th. She remained well and active for five years. In the fall of 1937 she developed pulmonary tuberculosis and at the present time is in a sanatorium.

No. 3 (17,604). A white office clerk, age 38, was seen April 15, 1933. He had contracted syphilis at 16 and been treated for some time. He had complained of headache each morning for three days. On the afternoon of April 14th he fell unconscious while at work. He roused in ten minutes and was taken home in an automobile. He vomited incessantly. The physician called made a diagnosis of gastritis and administered a hypo. When seen the next day he was confused and irrational. His pupils were unequal, irregular and fixed. His neck was stiff. His blood pressure 116 systolic and 76 diastolic. A spinal puncture gave a uniformly bloody fluid. The serology for syphilis on both the blood and spinal fluid was four plus. The colloidal gold curve was 5555544322. The next day he was worse, with a very stiff neck and bilateral Kernig signs. The spinal fluid was a darker red. Subsequently he was punctured daily, the fluid gradually becoming less bloody, so that by the 24th it was clear and golden yellow in color. By this time the stiffness of his neck and the limitation of straight leg raising had disappeared, but he remained confused, disorientated and at times actively delirious. On May 10 he was transferred to the State Hospital at Jacksonville, where he was inoculated with malaria. By the middle of July his condition had so improved that he returned to work. He is still at work and regards himself as well.

No. 4 (17,977). A German coal miner, age 43, blew his nose very hard on October 3, 1933. He immediately experienced severe pain about both ears which spread into the back of the neck, became very dizzy and vomited. He was able to come to the office next morning, where examination was negative except for marked cervical rigidity and some unsteadiness of his gait. He was admitted to the hospital, where eight spinal punctures were done. The first three were uniformly red to pink, the last ones clear and only slightly xanthochromic. Serology for syphilis negative. He was discharged in good condition October 16th.

No. 5 (18,198). An obese American housewife was taken with severe headache as she started to get out of bed December 26, 1933. She was unconscious fifteen minutes. Subsequently she complained of headache and was alternately drowsy, restless and confused. Examination showed a stiff neck, slightly positive Kernig signs, a heart slightly enlarged to the left, easily palpable arteries and a blood pressure of 170 systolic and 105 diastolic. The tendon reflexes were absent. Spinal puncture was done on the 27th. The fluid looked like pure blood but did not clot. The cell count was 2,600,000. The next day the count was 1,500,000 and on the 29th 100,000. On the 30th she was not so well and the cell count was 210,000. On the 31st it was 170,000, on January 2nd 70,000 and on the 5th 30,000. She was discharged from the hospital January 24th. In 1935 she developed a right hemiplegia. In April, 1936, her blood pressure was 270 systolic and 185 diastolic and in September, 1937, 256 systolic and 140 diastolic. She is still doing most of her household chores.

No. 6 (20,642). A business man, age 56, was found unconscious on the floor of his office November 16, 1936. In five or six minutes he roused, vomited and complained of severe occipital headache. A physician who had adjoining offices told him he had some sort of indigestion and sent him home in a taxi. He remained in bed, complaining of headache and nausea. His temperature varied around 100 and most of the time he was confused and irrational. When seen on the 26th his neck was quite stiff and Kernig's sign positive. Blood pressure 170 systolic and 98 diastolic. The palpable arteries seemed normal. The optic fundi were normal except that the arteries appeared small and stringy. The spinal fluid was slightly turbid, reddish yellow in color, and showed 450 red cells and 150 white cells per cmm. On the 27th it was a turbid yellow color with 370 red cells and 60 white cells, and on the 28th was a clear yellow with 150 red cells and 60 white cells. By this time his condition had improved markedly and he was perfectly clear mentally. On December 2nd, while using the bed pan, he became very faint and a few hours later began to complain of pain in the back of his head and neck. The next day his neck and legs were very stiff. On the 4th the spinal fluid was bright red and contained 23,000 red cells per cmm. Subsequently a spinal tap was done daily and by the 11th the fluid was clear and light yellow in color. The serology for syphilis was negative throughout. He was discharged from the hospital De-

ember 13. The last of January, 1937, his examination showed nothing abnormal; his blood pressure was 144 systolic and 88 diastolic. He took a trip to Florida. Subsequently he has been seen every four to six months and has remained perfectly well, with a blood pressure of 144 to 154 systolic and 88 to 92 diastolic.

SUMMARY

Spontaneous subarachnoid hemorrhage occurs fairly frequently, probably about as often as subacute bacterial endocarditis.

It usually occurs from the medium-sized arteries at the base of the brain, in or near the circle of Willis.

It is always due to some change in the vessel walls. In the younger group this is usually a congenital defect in the muscular coat. In the older group it is usually arteriosclerotic degeneration. In both aneurysmal dilatation is common.

Following the hemorrhage there is a reaction on the part of the meninges which is similar to that following bleeding into any serous cavity.

The majority of cases occur in people who have regarded themselves as well.

The immediate symptoms are due to increased intracranial pressure and consist of sudden violent headache, dizziness, nausea, vomiting and collapse. On examination there is cervical rigidity and Kernig signs without gross evidence of cerebral localization.

The late manifestations are due to the irritating effects of the blood and the products of hemolysis and are those of a low grade meningitis.

The diagnosis is usually easy provided the condition is thought of and a spinal puncture done. The diagnostic feature is a uniformly bloody fluid which on standing or centrifuging shows xanthochromia.

The condition is serious and the prognosis should be guarded, but many cases recover completely.

Early treatment is that of internal hemorrhage in general and the control of intracranial pressure. Later treatment is removal of the irritating blood by repeated spinal puncture.

Six cases with recovery are reported.

CONCLUSIONS

Spontaneous subarachnoid hemorrhage occurs with sufficient frequency to be added to our regular list of diagnoses. It produces a distinct enough clinical picture to be recognized and the

tentative diagnosis can be easily confirmed or disproved by spinal puncture. The prognosis is not as bad as is generally believed. Proper treatment is effective.

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DISCUSSION

Dr. Garm Norbury, Jacksonville: We are all indebted to Dr. Herndon for bringing the subject of spontaneous subarachnoid hemorrhage before the Society. We are not accustomed to think of subacute bacterial endocarditis as at all uncommon. Yet here we have reported a type of disorder that often we never think of at all but which by the authors' statistics is as common as that type of endocarditis. This all goes to show me that I have missed cases of spontaneous subarachnoid hemorrhage, for I have no record of nearly as many patients with this as with endocarditis. On the other hand, the picture is usually so striking that it would be considered in acute cerebral situations, especially in young adults. Perhaps the fact that bloody spinal fluid is secured and that bloody spinal fluid is generally taught to mean an error in the puncture technic complicates the picture and the diagnosis. Such teaching, which is in the main correct, leads to a feeling of being disconcerted at the sight of the bloody fluid, when perhaps the fluid actually was blood from spontaneous subarachnoid hemorrhage rather than from technical error. We will have to watch our step now that we don't swing the other way and increase our frequency

of making this diagnosis as a face-saving proposition.

An extensive subarachnoid hemorrhage in a young person is a dramatic and a tragic condition. A young man of eighteen was recently admitted to the sanatorium in convulsions. History from his relatives and physicians brought out the fact of a headache two weeks previously, quite severe in intensity and about sixteen hours in duration. After that he felt as well as usual and worked throughout the day of admission. He came to town about 6 P.M. and developed a severe headache. He came in at 7:45 P.M. on March 19, 1938, and fell on the couch with severe pain in the head behind the eyes. He had had a similar attack two weeks previously. He was perspiring freely. The pain struck suddenly. He ate a light supper at home and vomited at 8 P.M. Eye grounds were pale; ears normal. At 8:30 he felt better and walked downstairs. Immediately he returned and began to vomit and clutched his head with both hands. At 9:15 convulsions began and he had involuntary urination. He said he was dying; his limbs were numb, his arms drawn up over the chest. The pupils were equal, moderately dilated. There was no Kernig sign. The condition began to clear at 10 P.M., morphine $\frac{1}{4}$ grain having been given at 9:30 P.M. He was admitted to the sanatorium at 11:30 P.M., at which time he could not be aroused but did respond slightly by moving his arms when addressed. He was well developed and well nourished. The ear canals contained a moderate amount of cerumen. Pupils were contracted and did not respond to light; slow rotating lateral nystagmus was present as well as strabismus; the eye grounds were seen with difficulty but the disc edges were apparently clear. Facial motions were symmetrical, the thyroid full, but there was no neck stiffness. The heart was enlarged to the left and forceful; systolic murmur was heard and slightly transmitted to the axilla; there was also an irregular, cardiorespiratory arrhythmia. Blood pressure was 240/110. The abdomen and genitalia were negative. The extremities were relaxed. There were no knee jerks or ankle jerks, no abdominal, epigastric, cremasteric or plantar reflexes; no Babinski, Gordon or Oppenheim signs, no clonus. Spinal and cisternal fluid were bloody. Kahn was reported negative. Other tests were unsatisfactory because of blood and small amount removed. Death occurred at 1:55 A.M.

Such situations are tragic. Dr. Herndon's paper, with results from proper diagnosis and treatment such as he secured, gives encouragement to us all by showing what can be done.

I haven't carried out my plans to elope. I found her father was planning to move and I didn't know where we'd find him when we got back.—*The American Interne*.

"As I live and breed!" exclaimed Mrs. Dionne, "I never thought he was a mathematician when I called him to deliver me."

TUBERCULOSIS OF THE CERVIX UTERI

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Cervical tuberculosis was first mentioned by Raymond, a French writer who in 1831 was describing typical tuberculous lesions of the female genitalia. Bonnet and Bulliard, however, credit Lisfranc in 1842 with the first report of this lesion. The literature from then on contained numerous descriptions until Moore in 1919 recorded 170 cases of which not more than fifteen to twenty were described as primary cervical. The frequency of this disease is shown by the occurrence of three cases in 1170 cervical lesions, or 0.26 per cent. studied by biopsy in our clinic.

Two routes of infection are recognized in female genital tuberculosis: 1. from within or descending, which comprises (a) blood stream infection; (b) lymphatic infection; (c) direct extension from the peritoneum; 2. from without or ascending, which includes extension upward by (a) direct continuity along the mucosa; and (b) by way of the lymphatics. The descending route is by far the more common. This is shown by the fact that most of the pelvic tubercloses are secondary to foci elsewhere in the body. The order of frequency in the female generative tract is: fallopian tubes, ovaries, endometrium, cervix uteri, vagina and vulva.

Jameson, in a series of experiments carried out on virginal guinea pigs, found that ten of the eleven animals showed a definitely positive infection as shown by the tuberculin test, but that tuberculous lesions were discovered in only five. Each of these animals had been inoculated by a known strain of tubercle bacilli applied to the cervix by a tampon which was held in place for from four to eight days. One of these animals showed tubercles in the cervix in addition to the lymph node involvement common in the others. The lymph nodes most commonly involved were the iliac chain and those of the inguinal region. In no case were lesions found in the paratracheal, bronchial, hepatic or mesen-

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teric nodes. In a second series of experiments only sensitized animals were studied. The results obtained confirmed the experiments of Bakocs and Gronzou. Of the 15 animals studied, nine showed submucous lesions in the vagina, four had lesions in the cervix and one had a large tuberculous abscess in the uterus. In no case were the tubes or ovaries found involved. He concludes that these findings in the vagina, cervix and uterus can be explained only on the basis of lymphogenic spread.

To prove the origin of a cervical tuberculosis is indeed difficult. Numerous authors have quoted cases and experimental evidence to show that the infection is hematogenous. This, however, is still an unproven fact. That this is the usual method of tuberculous spread in the body must be acknowledged, but Siegel and Singer were able to obtain positive cultures in only 1.4 per cent. of 911 specimens from 422 tuberculous persons. Jameson's experiments tend to prove that inoculation may be direct. The infrequency of tuberculosis in the mates of males infected with urogenital tuberculosis, however, tends to disprove this mode. Hammer cites a case of a husband with pulmonary tuberculosis who used his sputum for lubrication at coitus. His sputum contained tubercle bacilli. His wife became infected and at autopsy tuberculous tubes were found. Until evidence is more convincing we shall probably have to consider cervical tuberculosis as secondary to another lesion in the body. By injecting the uterine lymphatics of guinea pigs, Jameson has shown that the cervix and corpus have independent lymphatic drainages and that uterine tuberculosis seldom extends below the internal os or cervical tuberculosis above that point.

Four types of tuberculosis of the cervix are recognized, the ulcerative, papillary, miliary and interstitial. Although certain clinical characteristics are described for each, the fact remains that few cases can be diagnosed except by microscope or guinea pig inoculation. In the ulcerative lesion which has a red granular base with punched out or overhanging edges, on microscopic examination the epithelium is usually absent and the deeper tissues invaded by tubercle. In the vegetating or papillomatous form which is most often mistaken for carcinoma clinically, the microscopic picture shows the fungoid vegetations covered with modified epithelium and a

stroma infiltrated with tuberculous elements. The miliary form may be a part of an acute miliary tuberculosis or the early stage of any of the forms listed. Typical tubercle formation with or without caseation is found. The interstitial form is regarded as a more advanced form of the miliary. Microscopically the lesions are found to be localized in the depths of the cervical parenchyma where tuberculous nodules are seen in various stages of evolution.

The symptoms of tuberculous involvement of the cervix depend entirely on whether or not the cervix alone is involved. In those cases where a primary focus exists elsewhere in the body the symptoms of fever, cough, fatigue, weight loss, etc., are likely to overshadow the local manifestations. The age incidence in our cases was the same as those reported in the literature; the greater number occurring in the third decade of life. One of our cases occurred in the second and a few cases have been reported in the fourth and fifth decades. This fact aids in the differentiation of carcinomatous lesions which appear more frequently in patients over forty years of age. Leucorrhea is the most common symptom, having occurred in all our cases. It is usually a glossy mucoid secretion exuding quite freely from the cervical canal. Bleeding occurs especially in the ulcerating and proliferating types. It is usually contact bleeding, occurring after coitus or trauma associated with instrumentation. Frank metrorrhagia seldom occurs, while menorrhagia is usually associated with endometrial or ovarian involvement. Amenorrhea occurs in approximately 40 per cent. of cases, and was present in one of ours. This symptom, however, is usually associated with more advanced or general tuberculosis. Sterility, according to Spalding, is found to be present in over 60 per cent. of these patients. This was true in our case study. Two patients had become pregnant in early life but in both instances aborted. Pain is usually considered to be absent or slight or indefinite. In one of our cases, lower abdominal pain was complained of, but in this instance a myoma of the uterus complicated the tuberculosis.

The diagnosis in almost every instance is made by microscopic examination of tissue removed by biopsy from the lesion. The tissue removed for biopsy study should include all of the constituents of the cervix. The more advanced

forms closely resemble carcinomatous invasion of the cervix and this diagnosis was most often erroneously made. The typical tuberculous ulcer is quite irregular and has sharply demarcated edges, its floor consists of a velvety deep red granulation which at times may be covered by a dirty grey necrotic membrane. In the miliary type tubercles may be found studded over the portio of the cervix and in the interstitial form a hypertrophy and reddening of the cervix may be the only clinical findings. In this instance it is impossible to make the diagnosis without a deep biopsy. These lesions upon being disturbed do not have the characteristic free bleeding of a malignant growth. In our study the lesions were all multiple which is also unusual in a malignancy. The Schiller reaction is negative in tuberculous lesions. Colposcopic study was found to be an aid to diagnosis. The clear-cut edge and the edematous smooth base of the ulcer differ markedly from the irregular edge and granular base of an early carcinoma. On digital examination the friability of tissue and woody induration so characteristic of carcinoma is absent. In those cases where typical tubercles are not found on microscopic study, guinea pig inoculation of ground up tissue or staining the tissue or smears from the tissue with acidfast stains may be of some value. The differential diagnosis must include besides carcinoma, leucitic and gonorrheal granulomata, sarcoma and extensive erosions associated with hypertrophy and eversion of the cervix.

That tuberculosis of the cervix may heal spontaneously was believed by Murphy and has been shown in one of our cases. In another case the disease spread rapidly to the vaginal walls and undoubtedly became widespread enough to cause the death of the patient. Hofbauer maintains that the disease may spread to the uterus, tubes and even to the peritoneum.

The treatment of this condition is surgical, radiological or conservative. In lesions localized to the cervix, less radical measures consist of general supportive treatment of fresh air, diet, rest and local cleanliness, with cauterization (Faure), electrocoagulation (Bonnet and Bulliard), cautery amputation of the cervix and treatment of the stump with tincture of iodine (Katz), roentgen-ray treatment through a sup-

rapubic field (Dworzak). Spalding reports a case treated with x-ray therapy without benefit. This case was later hysterectomized and the process found limited to the cervix. In one of our cases radium was used with apparent good results. This case, however, also had a syphilitic lesion of the cervix which healed after antiluetic therapy. The radical procedure of performing a panhysterectomy is advocated by Culbertson, Danforth, Possi, Webster, Kynoch and the majority of American gynecologists. It must be remembered that extension to the vaginal walls occurs frequently and in this instance hysterectomy is of no avail.

A detailed report of our cases cannot be included in this paper due to the lack of time. They will, however, be published in detail in a later report. The three patients, all colored, were 28, 30 and 38 years of age respectively. In each case leucorrhea was the major complaint. A primary focus could not be found outside the cervix and vulva. In one case the infection spread upward rapidly and caused the patient's death. The remaining two cases are living and well at present. The one having responded to general hygienic and supportive treatment. The other having been treated by antiluetic therapy and radium. The antiluetic treatment successfully cleared up a gumma which complicated the tuberculosis in this case, and the radium healed the tuberculosis. A positive Kahn and Wassermann reaction were found in one of the other cases.

SUMMARY

Tuberculosis of the cervix is a rare disease, having occurred in 0.26 per cent. of 1170 cervical lesions studied by biopsy in our clinic. Two routes of infection are recognized, a descending and ascending. The descending is the most widely accepted, although experiments from Jameson are cited to prove the possibility of an ascending route. Leucorrhea is a constant symptom and the diagnosis must be made by biopsy. The demonstration of tubercles on microscopic section is not sufficient unless acid-fast tubercles can be demonstrated. The treatment of cervical tuberculosis is surgical, radiological or conservative. Two of our cases are reported well, the one treated with radium four

years ago and the other by medical supportive therapy two years ago.

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TREATMENT OF MALIGNANCIES OF THE COLON AND RECTUM

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Marked advances have been made in recent years in the treatment of malignancies of the colon. Noteworthy factors contributing to this advance include: (1) earlier recognition and treatment of lesions made possible by educational programs to the laity, by the recognition by the profession of the importance of certain early symptoms, and by improved and more available diagnostic methods; (2) improvement in the technique of treatment whether by surgery or irradiation and the recognition of the indications and limitations of each; (3) preoperative measures directed to the rehabilitation of the patient and the decompression and cleansing of the colon; and (4) recognition of the value and rationale of multiple stage operations.

Treatment of malignancies of the colon is dis-

tinctly worth while to the patient. It is true the percentage of five-year survivals are often discouraging, particularly of the rectum, but these figures are influenced by the limits of operability set up by the surgeon. Surgical attack upon lesions of doubtful operability lowers the percentage of five-year survivals, but the occasional cure in this type of case encourages us to increase our limits of operability. Five-year survivals as reported by Pemberton and Dixon¹ vary from fifty-two per cent. in the cecum to forty-three per cent. in the rectum according to figures based on twenty years' experience of the Mayo Clinic. A careful history and examination to demonstrate the location of the growth, the degree of fixation or obstruction, and any evidence of metastasis, is imperative and influences the type of treatment used. Carcinoma of the rectum can be felt in most cases by digital examination. Growths within twenty-five centimeters of the anal margin can be easily visualized by the proctoscope. Roentgenoscopic visualization should always be preceded by proctoscopy for this reason.

Malignancies of the colon and rectum are most frequently attacked by irradiation, surgical diathermy (fulguration), or surgery; or the lesion may be treated by combinations of these methods.

RADIUM

Radium application is generally limited to the portion of the bowel easily visualized by proctoscopy, i. e., below the rectosigmoid. Cancer of the rectum has been cured in an occasional case by radium, while it has had little effect in other cases. The value of radium therapy alone is compromised by our inability to determine in advance which cancer is radiosensitive. Radium is usually given by one of three methods. First, radium may be used alone if an adequate distribution of application is obtained. This type of treatment is rarely used, being most frequently utilized in patients refusing surgery or in which surgery is contraindicated. Secondly, radium may be applied preoperatively in hope of avoiding surgery or in an effort to obtain some reduction in the activity and fixation of the growth. The full benefit of radium is not manifest for eight to twelve weeks after application and subsequent surgical attack is usually delayed for this period of time. It has been my

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unfortunate experience, however, to see a few small operable growths treated with radium primarily at the patient's request without benefit and finally when consent for surgery was obtained, the growth was fixed and complete removal was impossible. Conversely if a growth is too fixed for resection radium may be applied and occasionally resection is then possible in eight to twelve weeks. Finally, it is in palliative treatment that radium probably is most beneficial. Inoperable and recurrent growths should have at least one good application of radium. There is a definite lessening of the watery mucoid discharge, of blood, and the urgency of stool and pain are greatly relieved. Deep roentgen therapy is of much less value in the treatment of malignancies of the colon and rectum and is rarely indicated.

SURGICAL DIATHERMY

Surgical diathermy is applicable in selected cases of rectal malignancy. Strauss,² his associates, and others have been active in this field in recent years. Surgical diathermy is the treatment of choice in the small rectal polyp which is malignant or potentially so. When applied to the usual ulcerated adenocarcinoma certain limitations must be observed. Surgical diathermy is not applicable to growths above the rectosigmoid, or peritoneal reflection for fear of perforation into the general peritoneal cavity. Low lesions of the posterior wall of the rectum are most ideal for surgical diathermy. Preliminary colostomy is required in approximately fifty per cent. of the cases, and treatments may be repeated every two to three weeks until the desired results are obtained. The mortality approaches that of posterior resection of the rectum by the modified Kraske operation. According to Rankin³ forty-six per cent. of rectal growths have metastasized to the regional lymph nodes when seen by the surgeon. One serious objection, therefore, to surgical diathermy is that the glands are not removed. However, Kolischer as well as Strauss and his associates express the belief that diathermy arrests further progress and Strauss reports inhibition of the metastasis and states that the cancer cells in the glands removed later look dead. This, of course, is a vital question and must be definitely proved before diathermy is fully accepted. Surgical diathermy is occasionally combined with

radium in the treatment of large medullary lesions. Diathermy is used to burn away much of the tumor and then radium is applied. An adequate channel may be thus opened up and much palliation be obtained. Further advances may be expected in the use of surgical diathermy.

SURGERY

The aim of the surgeon operating on colon or rectal malignancies is the removal of the growth and the regional lymph channels and glands, and any local contiguous spread of the growth. The surgeon must have at his command several operative procedures if he is to offer the patient the best chance of cure, conserving at the same time as often as possible the normal rectal sphincter mechanism. When lesions of the rectosigmoid or rectum are present a temporary or permanent colostomy is often necessary and must be accepted by the patient and the surgeon. The colostomy is in most cases willingly accepted by the patient if he is shown a more hopeful prognosis by the use of a radical resection which includes the normal rectal outlet. I have never made use of operations leaving a sacral anus. I feel they are inadequate operations, for the lymph glands draining the site of the lesion are not removed. Control is poor for it is dependent on cicatricial contraction of the outlet. The location of the stoma is unsatisfactory to the patient and adequate care of the stoma by the patient is difficult. If the outlet is placed in the left lower quadrant it is easily cleansed under direct vision of the patient and the care is much simpler. The surgeon can do a great deal to help the patient with a colostomy and it is his duty to instruct the patient regarding his colostomy before releasing him. First the patient is reassured that the care of it is simple, that he cannot do harm by its care, and that he is not a social outcast. A few examples of persons who have had a colostomy for years aid in this mental build up. Then frequently I instruct the patient after he is home and back to his usual routine to take a small enema each morning. This usually takes care of the fecal discharge for the day and later after the routine has been established most of these patients establish regular bowel habits without the enema. Diet likewise is an aid but need not be a restricted diet. A wide belt which is rubber lined

at the colostomy site is to be preferred to a colostomy bag. Under the belt a little cellul-cotton or similar absorbent is worn, and is usually all that is necessary. The colostomy soon ceases to be a matter of much concern to the patient.

There are certain basic principles in surgery of the colon the experienced surgeon follows in the successful management of these cases. The colon is an infected tube unlike the upper part of the gastrointestinal tract, and the slightest soiling may give rise to serious infection. The blood supply is limited and must be carefully preserved. It is wise to look for pulsation in the small arteries near the divided bowel to insure viability of the bowel. As a rule, if the marginal artery is not sacrificed adequate blood supply is maintained. Primary anastomoses are dangerous, leakage is almost sure to occur and peritonitis frequently follows. Resection of growths with end to end anastomosis has been almost entirely replaced by some type of exteriorization operation.

Operation upon the colon in the presence of obstruction is done at a definitely increased risk, particularly if the attack is made directly upon the obstructing lesion. A preliminary decompression operation is indicated after careful and persistent medical care has failed to relieve the obstruction. Cecostomy or appendicostomy are probably the more commonly used operations of this type but I feel they are definitely inferior to colostomy proximal to the lesion. It is possible by roentgen examination of the gas-filled bowel or by digital rectal examination or palpation to localize the obstruction adequately. A colostomy proximal to the lesion is just as easily and safely done; it may be opened at once by cautery or catheter drainage if necessary and it permits a more complete diversion of the fecal current. I recall a man who had been brought in the hospital with an obstruction of the colon and an emergency cecostomy had been done. This relieved the obstruction but feces continued to fill the descending colon and irrigation through the cecostomy could not remove this mass of feces. It was necessary to do a transverse colostomy before sufficient decompression and cleansing of the bowel could be accomplished to safely permit the removal of an obstructing sigmoid growth.

The preoperative preparation and the post-operative care of these patients have contributed greatly to the improved status of colon surgery at the present time. If the patient is properly rehabilitated and the colon cleansed and decompressed preoperatively the risk of the operation is less and the convalescence easier. The patient enters the hospital forty-eight hours before the operation and is given rectal irrigations of normal saline until the bowel is clean. This procedure is repeated the second morning. A mild cathartic is given on admittance and the following morning. The night before operation and the morning of the operation the patient is given paregoric and the bowel is aspirated. A high caloric, high carbohydrate, non-residue diet is allowed. If the patient has an obstruction much relief can be obtained by warm rectal irrigations, hot abdominal stupes, intraduodenal suction and intravenous fluids. Rarely is it not possible to markedly improve the patient with an obstructing colon lesion before operation. It is my custom to withhold fluids by mouth post-operatively until evidence of peristaltic activity is present. Distension, which is certainly to be avoided in colon surgery is thus reduced to a minimum.

Intraperitoneal vaccination preoperatively undoubtedly has had a great deal to do with reducing the incidence of peritonitis. It is composed of killed bacillus coli and streptococci and is injected intraperitoneally forty-eight to sixty hours before operation. The cell count of the peritoneal exudate is increased ten times or more. At first the exudate is composed of neutrophiles; after forty-eight hours histiocytes replace the neutrophiles. The effect is for the most part a non-specific phagocytosis. The bacterial vaccine is preferred to other substances for it also tends to arouse a certain amount of true antibody immunity. This vaccine, however, is specific to just the bacteria used and to just the particular strain of that bacteria, so that the non-specific phagocytic effect is the more important. It is also well known clinically, that any intra-abdominal procedure that opens or divides the bowel contaminates the peritoneum; a true aseptic anastomosis or resection does not exist. And it is well that it does not. For the effect of this slight contamination persists long enough to set up a certain immunity against the predominating organisms present in the colon of this particular patient. This immunity is most effective.

tive in the peritoneum where the reaction occurred. Hence, two to three or four weeks later when this immunity has probably reached its height, a more radical procedure even with considerable soiling can be carried out more safely than if it were done as a primary procedure. That such general and local immunity exists is shown nicely by the primary healing which usually follows the closure of a colostomy in a definitely infected field.

This discussion then leads naturally to the question of single or multiple stage procedures. The exteriorization type of operation following the Mikulicz principle, now so universally applied to suitable lesions, is always done in two or more stages. However, in the rectal or rectosigmoid lesion or lesions in the right half of the colon, opinion is quite divided as to whether these lesions are best resected in one or two stages. Certain lesions are resected in two stages by necessity, namely: those lesions which are fixed, perforated, obstructed, or lesions in debilitated patients. Likewise occasionally a lesion is resected in one stage by necessity. There exists, however, a great number of cases in which the decision is made electively by the surgeon. The ideal is to do that operation which will most quickly restore the patient to health at the least risk to his life. It is generally held, I believe, that one-stage procedures are advised because the patient is young, robust, the growth is small, or the surgeon is so adept that the procedure may be carried out rapidly with little shock. Surely to do a one-stage procedure these criteria should be fulfilled, but I believe a very basic point is being overlooked in this reasoning. That is the question of peritoneal protection. A preliminary division of the bowel and establishment of a colostomy, or the establishment primarily of an ileocolostomy contaminates the peritoneum enough to set up the immunity mentioned before, so that the resection, the really serious part in the cure of the patient, is done with less reaction and a lowered mortality. To compare statistics is difficult in one surgeon's practice for he has done probably all the difficult cases in two stages and the easier cases in one stage, but I believe that had his easier cases been subjected to a two-stage procedure the mortality among these cases would have been considerably lower. In addition I feel sure that wound infections, ileus, and debilitating postoperative

reactions are more common following one-stage procedures. For these reasons, the period of time from the initial operation until return of health is no longer and the actual hospitalization frequently is no longer if two-stage procedures are employed in preference to one-stage procedures. Each case must be handled individually but I believe that if multiple-stage procedures are favored, conservation of life, time and money will be better effected.

There exists numerous operative procedures for the choice of the colon surgeon. The situation of the growth, the presence or absence of fixation or metastasis, and the age of the patient helps the surgeon to select the most ideal procedure for the particular patient. Lesions located between the hepatic flexure and the lower sigmoid are best handled by exteriorization, removing the growth at once at the level of the skin by the use of a three-bladed clamp or packing away the skin and removing the bowel flush with the fascia in ten days. The latter procedure permits the removal of more bowel and mesentery. Then the spur is removed by a necrosing clamp and the colostomy is closed at a later date. Lesions in the right half of the colon are best handled by a preliminary ileocolostomy to the transverse colon followed at a later date by a resection of the right half of the colon. If the growth is fixed or perforated an end to side anastomosis will permit a subsidence of the associated infection and facilitate resection. The sealing off principle of Pemberton⁴ reduces contamination of the general peritoneal cavity to a minimum and permits a greater limit of operability. Lesions just above the rectosigmoid, at the rectosigmoid, or involving the upper rectum, may be resected by one of several procedures. Here the surgeon must exercise fine judgment to select the procedure which will give the best chance of cure at the least risk and at the same time preserve the rectal sphincter if possible. If the patient is thin and the growth lies at least two inches above the peritoneal reflexion it may be exteriorized by division of the peritoneal reflexion and straightening out the sacral curve of the rectum. This is, of course, safer than any intra-abdominal anastomosis. If exteriorization is not feasible then after a preliminary left loin or transverse colostomy the lower sigmoid and rectosigmoid may be freed up, the lesion excised widely, taking much of the sig-

moid mesenteric gland bearing tissue and anastomosing end to end the bowel over a tube as in the Balfour type of operation or as described by Dixon,⁵ bringing the anastomotic line below the peritoneum. The colostomy is then closed at a later date. Dixon has applied this procedure to lesions involving the rectosigmoid and upper rectum in preference to the combined abdominoperineal resection. The combined operation is the most radical. After a preliminary single-barrel colostomy the remaining sigmoid, rectosigmoid and rectum are freed from their attachments, a new peritoneal floor reconstructed and the bowel removed through the perineum, sacrificing the anal sphincter and leaving a permanent colostomy. The lymphatic drainage of the upper rectum and rectosigmoid is proximal, hence the operations of local segmental resection are justifiable and have a definite place in the surgery of the rectosigmoid and upper rectum; but I feel local recurrences are definitely more frequent after the local resections than after the combined abdominoperineal resection. Lower rectal growths are best handled by a preliminary permanent colostomy followed by a resection of the rectum employing a modified Kraske type of operation. A few lesions limited to the mucosa are amenable to local excision followed by radium.

Finally even in the presence of a metastatic nodule in the liver, resection if easily accomplished, is often advisable, for life is made more comfortable, and death from metastasis is less painful than from a bleeding, ulcerating, penetrating, local lesion.

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DISCUSSION

Dr. Bernard Portis, Chicago: I would just like to discuss the question of electrocoagulation in carcinoma of the rectum. It happens that at the hospital with which I am associated most of the work is being done in Chicago. Back in 1921 I used electrocoagulation in experimental work. That was followed shortly after

by the application of electrocoagulation to these growths in the rectum. There is considerable divergence of opinion in our own hospital as to applicability of this procedure. I personally feel it has a definite use but very sharply demarcated in contradistinction to Dr. Strauss who uses it in most cases of carcinoma of the rectum. I have seen at postmortem hemorrhages and perforation after its use. I think it is definitely limited to tumors below the peritoneal reflexion and on the posterior wall. If any case is operable it should be operated on even though it is in a position that may be treated by electrocoagulation. Sometimes it is not necessary to do a colostomy in a growth in the anal canal, as we can destroy the growth and have a satisfactory anal canal. If the lesion is below the peritoneal reflexion in a patient who cannot stand radical surgery, such as diabetics, cardiacs and those with coronary lesions, electrocoagulation has helped. It has helped a great deal in the treatment of inoperable carcinoma of the rectum. I believe indiscriminate use of this method has put back the progress of rectal surgery to a considerable degree because many patients who are operable are treated by electrocoagulation and then go on to the inoperable stage with gland involvement.

Dr. Lorin D. Whittaker, Peoria (closing): I appreciate the discussion which brought out a little more in detail the feeling I have with regard to electrocoagulation. Surgery is without doubt the treatment of choice but to be most successful it must be done early. Malignancy must be excluded in any patient complaining of rectal bleeding, even in the presence of hemorrhoids, or in patients presenting changes in bowel habit, or presenting the picture of an unexplained anemia. This is done by digital rectal examination, proctoscopy and roentgenoscopy. If we keep alert to the possibilities of colon malignancy and investigate our suspected cases early, we can bring the patients to early surgical relief with improved prognosis. The treatment must be individualized.

LAROSTIDIN IN THE TREATMENT OF PEPTIC ULCER

New importance is placed upon the Larostidin treatment for peptic ulcer by a report appearing as the lead article in the November issue of *Military Surgeon*. Based on the author's experiences with the therapy over a period of more than three years in a group of 132 cases, the article shows Larostidin the therapy of choice in gastro-intestinal ulcers, even some that were complicated by serious other diseases, and reveals important economic advantages to this method of treatment. According to Mitchell M. Benedict, B. S., M. D., the author, use of this treatment resulted in slashing average hospitalization time for peptic ulcer patients from 90 to 30 days.

Included in his group of 132 cases were 10 cases of tuberculous enterocolitis.

In a quite detailed preamble Dr. Benedict summarizes the previously published conclusions of other investigators with regard to the Larostidin treatment. As a check upon the theories held by some that response to Larostidin might be due mainly to bene-

ficial psychological impressions, Benedict hit upon the naive plan of giving injections of normal saline solutions to 10 patients who thought they were getting injections of Larostidin. Nine other patients actually getting Larostidin were used as controls. The former group showed no response to the saline injections, "continued to have pain, food intolerance, impaired appetite, and to lose weight." Then, following the tenth injection, these 10 patients were switched, again without their knowing it, to Larostidin and, again quoting the author, "from the time of eleventh injection they showed the usual progress and improvement."

Discharged patients were followed by letter and there were periodic checks to determine recurrence of symptoms. Undoubtedly one of the most interesting findings was that, in these cases of recurrence, x-ray determinations revealed the development of a new ulcer rather than a breakdown of the original lesion. Where recurrence occurred patients were given a repeat treatment of Larostidin with satisfactory improvement in every instance.

Predisposition toward ulcer formation continues, the effect of Larostidin being upon the lesion itself rather than constitutional make-up, observes the author, who nevertheless believes that Larostidin may conceivably be more effective in altering the constitutional predisposition than is now conceded.

Case records of four patients are reviewed in detail. One male patient had a history of sharp pain in the epigastrium and vomiting 10 minutes after each meal over a period of 12 years, another 37 year old male patient a 14 year history of stomach trouble, including an operation for perforated ulcer 13 years back. A third case described was evidently a particularly hard test for Larostidin, exhibiting a two year history of severe gastric pain and hemorrhage, the pain of such intensity that the patient was taking $2\frac{1}{2}$ grains morphine per day; there had been hemorrhage only two weeks prior to the reported hospitalization. Every one of these patients was discharged symptom free after undergoing treatment with Larostidin.

The Larostidin treatment consists of deep intramuscular injections, every day for a period of usually 24 days, of 5 cc of the preparation (a 4% isotonic solution of 1-histidine-monohydrochloride).

MASSIVE DOSES OF VITAMIN "D" OF NO VALUE IN ARTHRITIS

Drs. Nathan R. Abrams and Walter Bauer of the Massachusetts General Hospital in a recent issue of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION said: Administration of massive doses of vitamin D, averaging between 150,000 and 200,000 U. S. P. units daily, is of little or no value in altering of the course of rheumatoid arthritis.

If the occasional beneficial results of vitamin D are to be ascribed to some impurity contained in the preparations employed, such impurity had best be isolated and tested separately, these physicians advised.

Massive vitamin D therapy for arthritis was first suggested in 1935 by Dreyer and Reed, and although several papers on the same subject have appeared since

that time, the evidence presented has been conflicting. Up to the present time, the Council on Pharmacy and Chemistry of the A.M.A. has not accepted any exceptionally high potency vitamin preparations for the specific treatment of arthritis.

Working with Winthrop's Drisdol, Abrams and Bauer found that toxic manifestations were observed when their patients received 200,000 U. S. P. units of the crystalline vitamin D in propylene glycol, or 300,000 U. S. P. units daily in sesame oil. Many of the patients also showed evidence of hypercalcemia, or excess concentration of calcium, at these dosage levels.

The possibility that propylene glycol might be responsible for the toxicity was eliminated by experiments in which the glycol was administered in milk to five patients in doses the same as or larger than they had received when taking the propylene glycol containing vitamin D. In no case instance were any symptoms experienced.

These results again emphasize the fact that propylene glycol appears to have quite a different reaction on the body than ethylene glycol or its derivatives.

Of 18 patients observed, eight showed subjective improvement throughout the period of therapy the doctors report, but in only three instances was this accompanied by objective improvement, and in only one was it marked.

MEDICAL CARE PLAN ABANDONED IN WASHINGTON

We have been informed through a communication from Dr. Clarence A. Smith, editor of *Northwest Medicine*, that the plan described in the October 15 issue of THE JOURNAL, page 1475, on "Care for Social Security Clients in the State of Washington," "was abandoned in the spring of 1938 due to suspension of federal contributions and lack of state funds." Because of this lack of funds, care of the indigent has now been returned to the individual counties, and there is no longer any uniform plan of supplying medical service for the indigent, and the greater part of such service is rendered without pay by physicians.

THE TYRANNY OF ABBREVIATIONS

When abbreviations are used in medical papers, in the recording of case histories or physical examinations or in operative or pathologic reports, the meaning should be entirely clear to all who may have occasion to read them. This is not, of course, the case. Abbreviations of medical terms are used obviously to save the time of the writer; too often, however, the time thus saved is wasted many times over by the person who is trying to decipher the meaning originally intended. When placed within a context, many of the abbreviations commonly employed in medicine are reasonably clear to those intimately familiar with the particular field; but when removed from such environment they become even more abstruse. Few readers for example can probably identify with ease such fairly commonly employed abbreviations as M. T. R., P.C.B., P. P. D., M. E. D., s. e. d., M. K. R. or K. P. Even when the abbreviations are placed in the proper set-

ting many medical men would have difficulty in translating PcB., into "near point of convergence," M. T. R. into "Meinicke flocculation reaction" or M. E. D. into "minimal erythema dose."

Although for the uninitiated the ophthalmologists possess probably the worst collection of uninterpretable abbreviations, such as K. P. for "keratitis punctata," Hm for "hyperopia manifest," O. U. for "oculus uterque (both eyes)," M. A. for "meter angle" and so on; almost ad infinitum, those in other fields are by no means free of criticism. The average physician would usually interpret P. S. P. as the "phenolsulfonphthalein test," M. L. D. as "minimal lethal dose" and possibly P. P. D. as "purified protein derivative," but others who also may need to translate such initials, including manuscript editors, social service workers and statisticians, may have serious difficulties. Sometimes the attempt at interpretation gives rise to persistent errors of more or less serious nature, such as the reasonable interpretation of *E. coli* as "*Endamoeba coli*" when it should have been "*Escherichia coli*."

Hours sometimes have been spent in attempting to decode the meaning of such abbreviations. The use of such short cuts to expression may be an indication of unnecessary haste, careless recording of notes, or slipshod methods of experimentation and study. Reports are written for the reader, not the author, and the reader should not have to be an expert in cryptography to find out what it is all about.—*Jour. A. M. A.*, Sept. 17, 1938.

ALCOHOL IN RELATION TO TRAFFIC ACCIDENTS

Richard L. Holcomb, Evanston, Ill. (*Journal A. M. A.*, Sept. 17, 1938), reports the results of a study of the drinking of drivers involved in personal injury accidents and of the drinking of drivers in the general population. The second study served as a control of the first, allowing conclusions to be drawn as to the part alcohol plays in accidents. A total of 270 persons were tested in the first study. Drivers involved in personal injury accidents who accompanied the persons injured to a hospital or drivers who themselves were injured were tested by urinalysis for alcohol. A total of 1,750 persons were tested in the second study. Drivers were chosen at random from an area comparable to that of the first study. A complete testing laboratory, with the Harger "drunkometer," was set up in a trailer, allowing breath tests for alcohol to be made immediately. 1. The highest percentage of drinking drivers occurs in the early morning hours and over the week-end. 2. The largest number of drinking drivers occurs in the early evening and over the week-end. 3. The peak age for drinking drivers is from 25 to 30. 4. Women drink and drive as much as men when the number of women driving at various hours of the day is considered. 5. The percentage of drinking drivers in the general population varies as does the percentage of drinking drivers in the personal injury accident group but falls considerably lower at all times. 6. The percentage or number of drivers involved in personal injury accidents varies as does the percentage

or number of drinking drivers. 7. As the blood alcohol content increases, the number of drivers appearing in the personal injury accident group increases out of all proportion over that in the general driving population. 8. As alcohol increases, accidents increase and at a rate somewhat proportionate to the increase in alcohol. 9. Equal percentages of drinking drivers are found in the accident group and in the general population group at a point near 0.5 part of alcohol per thousand parts of blood, indicating that alcohol in that amount is not necessarily a significant cause of accidents. 10. The data gathered in this study confirms a self-evident fact, that alcohol is a major cause of automobile accidents.

THE PATHOLOGY OF BERIBERI

E. B. Vedder, Washington, D. C. (*Journal A. M. A.*, March 19, 1938), states that the pathology of beriberi may be discussed under three heads: cardiac pathology, degenerative changes in the nervous system and anasarca. While much has been learned concerning the etiology of beriberi from animal experimentation, one should distinguish between the pathology of human beriberi and that of birds and animals. Knowledge of human pathology is more limited than it should be after so many years of study, but it is significant. Death does not appear to be caused by neuritis, however extensive it may be, but by cardiac hypertrophy followed by sudden dilatation and cardiac failure. The cause of the hypertrophy and dilatation of the right side of the heart is not known. Cardiac hypertrophy is much more frequent in the "wet" than in the "dry" forms of beriberi. Unfortunately this explanation does not account for the peculiar selection of the right side of the heart for this action. If the hypertrophy is caused simply by the imbibition of fluid by the muscle fibers, this could be shown by comparing the weight of this dried heart muscle with the dried weight of normal hearts. This has not been done for human cases. Until such observations are made on the enlarged hearts in cases in man, the question cannot be regarded as settled; but the fact is that at present one is still at a loss to account for the concomitant right sided hypertrophy and weakness in beriberi.

It is estimated that 10% of people in this country suffer from some kind of allergy; that is, are hypersensitive to some food or other substance.

In a recent survey at American colleges, it was reported that one student in every four is handicapped by serious eye defects.

Marriages

CLARK E. BAKER, Marion, Ill., to Miss Mary Rodd of St. Louis, September 10.

HERBERT PAUL DEXHEIMER, O'Fallon, Ill., to Miss Doris McGilligan at Tower Hill, October 29.

JOHN RICHARD HEATON, Hoopeston, Ill., to Miss Edyth Eleanor Clawson of La Fayette, Ind., October 29.

HENRY SARGENT HOWARD to Miss Louise Flora, both of Peoria, Ill., October 20.

THOMAS PAINE SALTIEL, Chicago, to Miss Gene Sternberg of New York, November 14.

Personals

Dr. John R. Neal of Springfield, Ill., has been appointed Dean of the Cook County Graduate School of Medicine. This was announced by the Board of Trustees following their annual meeting in December.

Dr. Lloyd Arnold has been appointed secretary and Dr. G. Howard Gowen chief medical officer of Chicago Board of Health.

Dr. Harry Oberhelman was invited to address the Scott County Medical Society of Iowa at Davenport December 6 on "Some Surgical Problems."

Drs. Clifford Grulee and Philip Schneider gave a program on "Infant Feeding" and "Toxemias of Pregnancy" before the Carroll-Jo Daviess County Medical Societies, December 7.

Dr. Herman L. Kretschmer read a paper at the meeting of the Southeastern Branch of the American Urological Association, Louisville, Kentucky, on December 2. His subject was "Elusive Ulcer of the Bladder."

Dr. Julius L. Spivack addressed the Milwaukee Society of Clinical Surgery, Milwaukee, Wisconsin, November 22 on "Some Points in the Technique of Appendectomy."

Dr. Maurice L. Blatt spoke before the Vermilion County Medical Society at Danville, Illinois, December 6, on "Rabies."

Dr. George L. Apfelbach gave a paper to the Tri-County Medical Society at Racine, Wisconsin, on November 30, 1938, on "Diagnosis of the Lesions of the Lower Back."

Dr. James H. Hutton was invited to present a program on "Some Common Endocrinopathies, Their Diagnosis and Treatment" before the Lee County Medical Society at Dixon, December 15.

Dr. Guy V. Pontius was invited to give a paper on "Diagnosis and Treatment of Diseases of the Colon and Rectum" before the Bureau County Medical Society at Spring Valley, December 13.

Dr. George F. O'Brien gave a program on "Pneumonia" for the Fulton County Medical Society at Canton December 13.

Dr. Clement L. Martin presented a paper on "Treatment of Hemorrhoids" before the Will-Grundy County Medical Society at Joliet, December 14.

Dr. Jerome R. Head was invited to give a paper on "Pulmonary Disease" before the Coles-Cumberland County Medical Society at Mattoon, December 14.

Dr. Norbert C. Barwasser, Moline, discussed the management of common skin diseases before the Whiteside County Medical Society, Sterling, November 21.

Dr. Edmund F. Foley, Chicago, discussed "Jaundice: Its Clinical Significance" before the Adams County Medical Society in Quincy November 14.

Dr. Francis L. Lederer, Chicago, addressed the Rock Island County Medical Society in Moline November 8 on "Throat Complications of Interest to the General Practitioner."

The Peoria City Medical Society was addressed November 1 by Lewis Gerber, Ph.D., on "Recent Advances in Clinical Chemistry" and Dr. Hugh E. Cooper on "Fractures of the Shaft of the Femur."

Dr. Fred W. Bailey, St. Louis, discussed "Nonpenetrating Intra-Abdominal Injuries" before the Madison County Medical Society in Alton November 4.

A symposium on intestinal obstruction was presented before the Sangamon County Medical Society, Springfield, November 3 by Drs. Richard F. Herndon, Thomas D. Masters, David J. Lewis and Charles L. Patton, all of Springfield.

Dr. Fred M. Drennan, Chicago, discussed "Diagnosis and Treatment of Irritable Colon" before the Will-Grundy County Medical Society in Joliet October 18. Dr. Jacob P. Greenhill, Chicago, addressed the society November 3 on "Diagnosis and Treatment of Obstetric Hemorrhages."

The Chicago Orthopaedic Society was addressed November 11 by Drs. Walter R. Fischer on "Fracture of the Scapula Requiring Open Reduction" (report of a case) and Wallace H. Cole, St. Paul, "Clinical Observations on the Physiology of Bone."

Dr. Howard C. Taylor, Jr., New York, discussed "Relationship of Hormones to the Toxe-

mias of Pregnancy" before the Chicago Gynecological Society November 18.

The Chicago Ophthalmological Society was addressed October 24 by Drs. Samuel G. Higgins, Milwaukee, on "Ophthalmic Surgery in India" and William A. Fisher, "Senile Cataract: The Usual Method of Operating in India." Dr. Robert von der Heydt showed photographs in color of diseases of the eye.

The Chicago Society of Internal Medicine was addressed December 19, among others, by Dr. Louis R. Limarzi and Emil M. Schleicher on "The Reaction of Peripheral Blood and Bone Marrow in Chronic Hemorrhage and in Essential Thrombocytopenic Purpura," and Dr. Carl C. Pfeiffer, "Effect of Analeptic Drugs in Hibernating Ground Squirrels."

Dr. Gilbert J. Thomas, clinical associate professor of urology, University of Minnesota Medical School, Minneapolis, discussed "Tuberculosis of the Urological Tract" before the Chicago Medical and Urological societies at a joint meeting December 7 at the Chicago Woman's Club.

Dr. Paul R. Cannon, professor of pathology, University of Chicago, has been appointed a member of the Medical Fellowship Board of the National Research Council, for the period ending June 30, 1941, to complete the unexpired term of Dr. Eugene L. Opie, New York, who resigned.

At a meeting of the Chicago Neurological Society October 20 the speakers were Drs. Foster Kennedy, New York, on "The Organic Background of Mind"; Victor E. Gonda, "War Neuroses," and Paul C. Bucy, "Tremor: A Consideration of Its Physiology and Abolition by Surgical Means."

Dr. Frederick A. Coller, Ann Arbor, Mich., discussed "Hypochloremia Associated with Surgical Diseases" before the Chicago Surgical Society November 4; Drs. Loyal Davis and John Martin, "Surgical Aspects of Paratrigeminal Lesions," and Geza DeTakats, "Observations of Congenital Megacolon."

The Chicago Laryngological and Otological Society was addressed November 7 by Drs. Ellison L. Ross on "Experiences with a Vital Stain in Otolaryngeal Tissues"; Frank E. Simpson, "Intrinsic Carcinoma of the Larynx—A New Instrument Modeled After the Jackson Bronchoscope for the Intralaryngeal Application of Radon," and Hans Brunner, "Inflammatory Dis-

cases of Meninges and Brain of Pharyngeal Origin."

Dr. Robert A. Black, professor of pediatrics, Loyola University School of Medicine, has been appointed president of the Chicago board of health. The appointment is temporary during the absence of Dr. Herman N. Bundesen, who has been granted leave of absence pending the outcome of the government's antitrust action against the milk industry, newspapers reported. Dr. Black has been a member of the board of health since 1935; he also is founder and superintendent of the La Rabida sanatorium in Jackson Park for children with heart disease.

News Notes

—The cornerstone of the new building for St. John's Hospital was laid in Springfield October 16. The new unit will be twelve stories high with accommodations for 620 patients.

—A group of introductory lectures on psychoanalysis began at the University of Illinois College of Medicine November 30 under the auspices of the Institute for Psychoanalysis. Dr. Franz Alexander, director of the institute, is making a systematic presentation of medical psychoanalysis. Sixteen weekly lectures make up the course, which carries a fee of \$10.

—A quarantine was placed against the Veterans' Administration Facility in Hines November 27, closing it to visitors following an outbreak of four cases and one death from diphtheria, according to the *Chicago Tribune*. At the time of this report fourteen patients had infectious sore throats. It was stated that six diphtheria carriers were disclosed in the tests that were given to 1,200 staff members and 1,800 patients. The quarantine will be continued until danger of an epidemic is over.

—New buildings at Anna State Hospital, erected during the past five years at a cost of \$1,275,121, were dedicated October 15. Mr. A. L. Bowen, director of the state department of public welfare, gave the dedicatory address. The recreation hall in which the ceremonies took place was named in honor of the late Dr. Ralph A. Goodner; other buildings have been named for Drs. W. C. Lence and William L. Athon, former managing officers of the institution. A portrait of Dr. Goodner was unveiled. Funds for remodeling and new buildings were supplied

through state appropriation and PWA grants. The Athon and Lence cottages are of the one story "E-type" construction which is standard for state mental hospitals and contain 120 beds each. A 132 bed diagnostic center and hospital is now nearing completion.

—The Educational Committee scheduled doctors to address 21 lay groups during the month of December. These included 8 programs on socialized medicine. The Committee arranged 23 scientific programs for county medical societies in the state during December. Seventeen of these programs were given by members of the Chicago Medical Society. The Committee has been invited to have an exhibit of its work at the Midwinter Meeting of the Chicago Dental Society at the Stevens Hotel in February.

—The Department of Medicine of the University of Chicago is continuing its clinical studies of lobar pneumonia. For this purpose a certain number of beds are set aside in the Albert Merritt Billings Hospital of the University Clinics to which patients may be admitted free of all charge in case their financial circumstances warrant such consideration. For the admission of patients with lobar pneumonia, or for further information, please telephone Midway 0800 and ask for Dr. Gray, the Resident Physician.

—Thursday, January 5, is designated as Medical and Hospital Day at the Medinah Shrine Circus, Union Stock Yards Amphitheatre. All proceeds from the circus are to be used for the maintenance of the Shriners' Hospital for Crippled Children.

Deaths

JAMES ROY BIERLY, Peoria, Ill.; Chicago College of Medicine and Surgery, 1911; a Fellow, A. M. A.; served during the World War; aged 55; on the staff of the Proctor Hospital, where he died, October 18.

ALOIS J. BLICKHAN, Quincy, Ill.; Keokuk (Iowa) Medical College, 1891; member of the Illinois State Medical Society; aged 74; died, October 20, of arteriosclerosis and hypostatic pneumonia.

WARD GREENE CLARKE, Chicago; Rush Medical College, Chicago, 1882; aged 79; died, October 27, of coronary and cerebral thrombosis.

CHESTER C. COPELAN, Springfield, Ill.; Chicago College of Medicine and Surgery, 1915; a Fellow, A. M. A.; served during the World War; aged 47; on the staff of St. John's Hospital, where he died, October 9, of splenic myelogenous leukemia.

FRANK T. DUFFY, Chicago, Ill.; Loyola University Medical College, 1914; a Fellow, A. M. A.; 1st Lt., 79th Division, U. S. Army, during World War. Went into action and upon returning to this country was commissioned in the U. S. Veterans' Administration and has held various high ranking positions up to the time of his death, November 17, 1938, in the Veterans Administration Facility, Los Angeles, California. Cause of death, coronary thrombosis; age 48. Since the close of the World War Dr. Duffy has been active in military circles attaining the rank of Major in the National Guard. He has been particularly active, and has done commendable work, in the ex-service men's organizations. He was a member of the Masonic order; American Legion; La Société des 40 Hommes et 8 Chevaux; Veterans of Foreign Wars; and the Military Order of the Purple Heart. In 1919 Dr. Duffy completed post-graduate courses at the Bellevue Hospital and Cornell University. He was a member of the Illinois Medical Society; and Association of Military Surgeons.

ARTHUR HORACE GORDON, Chicago; Hahnemann Medical College and Hospital, Chicago, 1887; a Fellow, A. M. A.; at one time professor of internal medicine at his alma mater; on the staffs of the Edgewater and Illinois Masonic hospitals; aged 75; died, December 2, of coronary thrombosis.

ALOYS HEINEN, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; aged 76; died in September in Germany of chronic myocarditis and arteriosclerosis.

PHILIP CARL MATTHEI, Chicago; Rush Medical College, Chicago, 1902; aged 57; died, September 2, in the Augustana Hospital of carcinoma of the rectum and mesenteric thrombosis.

CLIFTON B. OLDS, Chicago; Hahnemann Medical College and Hospital, Chicago, 1905; aged 72; died, October 31, following an operation for perforated ulcer.

WILLIAM WHELOCK QUINLAN, Wilmette, Ill.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1891; a Fellow, A. M. A.; medical referee of the Mutual Life Insurance Company; aged 71; died, September 24, of heart disease.

IRA T. ROBERTS, Johnston City, Ill.; St. Louis College of Physicians and Surgeons, 1902; aged 59; died, October 26, in St. Andrew's Hospital Murphysboro, of cerebral hemorrhage.

JAMES HENRY ROTH, Chicago; Rush Medical College, Chicago, 1895; aged 70; died, October 1, of cerebral hemorrhage.

WILLIAM HENRY SCHWINGEL, Aurora, Ill.; School of Pharmacy of the University of Iowa, 1893; Rush Medical College, 1905; a Fellow, American College of Surgeons; member of Illinois State Medical Society; served on staffs of Copley, St. Charles and St. Joseph Hospitals; aged 68; died November 7, result of injuries received in automobile accident.

HANNAH STEELE SPARROW, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1887; aged 84; died, September 30.



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would say:



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BUYERS INDEX

FOODS

Coca-Cola Co., Atlanta, Ga.....	..
Corn Products Refining Co., New York City.....	..
R. B. Davis Co., Hoboken, N. J.....	15
H. J. Heinz Co., Pittsburgh.....	..
Knox Gelatine Laboratories, Johnstown, N. Y.....	10
Mead, Johnson & Co., Evansville, Ind.....	19
Ralston Purina Co., St. Louis, Mo.....	..
S. M. A. Corporation, Cleveland.....	7

FINANCIAL AND INSURANCE

Employers Mutuals, Wausau, Wis.....	16
Medical Protective Co., Fort Wayne, Ind.....	28
Physicians Casualty Co., Omaha, Neb.....	39

HOSPITALS

Stokes Hospital, Louisville, Ky.....	25
Summit Hospital, Oconomowoc, Wis.....	26

INSTITUTE

Chicago Tumor Institute, 21 West Elm St.....	39
--	----

PHARMACEUTICALS

Alba Pharmaceutical Co., 80 Varick St., New York City...	11
American Agency, French Vichy, Brooklyn, N. Y.....	..
American Can Co., 230 Park Ave., New York City.....	3
Armour & Co., Chicago.....	..
Ernst Bischoff, Ivoryton, Conn.....	27
Bovine Company, Chicago.....	..
Bristol-Myers Co., New York.....	12
Carnrick, G. W., Co., 20 Mt. Pleasant Ave., Newark, N. J.	26
Chemico Laboratories, Indianapolis, Ind.....	31
Ciba Company, Cedar and Washington St., New York City..	39
Crookes Laboratories, New York City.....	..
Denver Chemical Co.....	33
E. Fougera & Co.....	..
Gold Pharmacal Co., New York City.....	30
Harrower Laboratory	30
Hoffman-LaRoche, Inc., Nutley, N. J.....	2
Hynson, Westcott & Dunning, Charles and Chase Sts., Baltimore	13
Lederle Laboratories, 30 Rockefeller Plaza, New York..	34, 35
Lilly, Eli, & Co., Indianapolis, Ind.....	18
Morris, Philip, & Co., 19 Fifth Ave., New York.....	8

Nutrition Research Laboratories, 332 S. Michigan Ave., Chicago	17
Parke, Davis & Co., Detroit, Mich.....	5
Petrolagar Laboratories, 8134 McCormick Blvd., Chicago...	4
Reed & Carnrick, Jersey City, N. J.....	..
Roche Organon, Inc., Nutley, N. J.....	20
Schering & Glatz, Inc., New York City.....	..
G. D. Searle & Co., 4737 Ravenswood Ave., Chicago.....	6
Sharp & Dohme, 111 N. Canal St., Chicago.....	..
E. R. Squibb & Sons, New York.....	9
Frederick Stearns & Sons, New York.....	..
Wm. R. Warner & Co., 113 W. 118th St., New York City..	14
Winthrop Chemical Co., 170 Varick St., New York City..	..
Zemmer Co., Pittsburgh, Pa.....	25

SANATORIA AND SANITARIA

El Paso Gateway Club.....	12
Edward Sanatorium, Naperville, Ill.....	27
Elmlawn (Wilgus) Sanitarium, Rockford, Ill.....	23
Kenilworth Sanitarium, Kenilworth, Ill.....	23
Michell Farm Sanatorium, Peoria, Ill.....	36
Milwaukee Sanitarium, Wauwatosa, Wis.....	Front Cover
Norbury Sanitarium, Jacksonville, Ill.....	23
North Shore Health Resort, Winnetka.....	27
Rogers Memorial Sanitarium, Oconomowoc, Wis.....	36
Waukesha Springs Sanitarium, Waukesha, Wis.....	23
Weirick's Sanitarium, Elgin, Ill.....	25

RADIUM

Physicians Radium Assn., 55 E. Washington St., Chicago..	28
--	----

SCHOOLS

Arizona Schoolatorium, Tucson.....	26
------------------------------------	----

SURGERY INSTRUCTION

Laboratory of Surgical Technique, 1950 S. Ogden Ave., Chicago	28
--	----

SURGICAL SUPPLIES

Baum Co., New York.....	..
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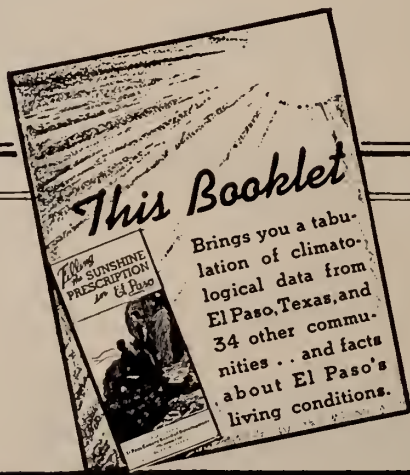


Climatological Data

EL PASO, TEXAS

From U. S. Weather Bureau Records

Mean Annual Average Temperature	63.7°
Average Annual Precipitation . . .	8.91 in.
Mean Annual Relative Humidity . . .	41%
Average Annual Number Days Cloudy	34
Average Number Days Clear and Partly Cloudy	331
Percentage of Possible Sunshine . . .	80%
Altitude Above Sea Level	3710 ft.



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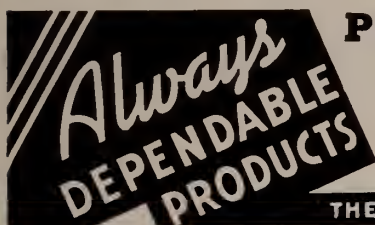
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(Continued on page 25)

(Continued from page 24)

Moultrie	S. H. Ambrose, Lovington.....	W. B. Kilton, Sullivan.
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"LIBERTY" AND MEDICINE

For some weeks *Liberty*, published by Macfadden Publications, has been printing what purports to be an exposé of medical practice by one Dr. "George B. Raymond." The story is called "Doctors Don't Tell." An editorial note intimates that this is a true story and that its purpose is to expose evils that are hidden by medical ethics. From all over the country have come protests from both nonmedical readers and physicians

against the obvious lack of dependability in this material. If the statements are honest and susceptible of verification, the author should not hesitate to attach his name. Evidence now available indicates however, that the prefix "Dr." before the author's name should also have been in quotation marks. A telegram was sent to Macfadden Publications asking the editor to confirm the fact that the articles had been prepared by an individual who had failed to receive a medical degree and who had admitted deceit in the securing of a license. Apparently Macfadden Publications does not wish to answer this question. These statements indicate how little creditability can be given to or dependability placed on this alleged exposé of medical ethics in *Liberty*.—*Jour. A. M. A.*, April 16, 1938.

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CONTENTS—Continued

Spontaneous Subarachnoid Hemorrhage. Richard F. Herndon, M. D., Springfield, Ill.	73
Tuberculosis of Cervix Uteri. Herbert E. Schmitz, M. D. and Clyde J. Geiger, M. D., Chicago	80
Malignancies of Colon and Rectum. Lavin D. Whittaker, M. D., Peoria, Ill.	83

EDITORIALS

Profession Will Continue to Give.....	1
Happy New Year, 1939!	1
Action Against A. M. A. Opens Vast Field.....	3
Doctor's Bill. Layman's Viewpoint.....	4
Medicine Cannot Escape Whirlwind.....	5
Medical Economics. E. S. Hamilton, M. D.....	7
Full Citizenship for Licensure.....	8
Tularemia Prevalent in U. S. A.....	9
Educational Committee Report.....	10
School Asks for Material.....	11
Illinois State Medical Society Paid for 1938.....	12
I Do Not Love You, Dr. Fell.....	12
American Congress of Obstetrics.....	12
Aid for Crippled Children.....	13
American Board of Ophthalmology.....	13
North Central Forum of Allergy.....	13

SOCIETY PROCEEDINGS

Marriages	89
Personals	90
News Notes	91
Deaths	92

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treated with subcutaneous corpus luteum extract and progesterin along the lines of allergic desensitization were gradually relieved of their symptoms. A high percentage of the patients with nausea and vomiting of pregnancy either had other diseases of allergy or gave a family history of allergy. Intradermal testing may determine, even before pregnancy, whether a patient will or will not be nauseated when pregnant by determining whether or not she is sensitive to progesterin.

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Book Reviews

DISEASES OF THE NOSE, THROAT AND EAR. By W. Wallace Morrison, M. D., Clinical Professor and Chief of Clinic, Department of Otolaryngology, New York Polyclinic Medical School and Hospital. 675 pages with 334 illustrations. W. B. Saunders Company. 1938. Cloth, \$5.50 net.

This volume epitomizes much of the material gathered and organized for his teaching. The work is intended entirely for the undergraduate medical student and the general practitioner. Throughout the work it has been the aim of the author to state all the facts necessary to make the subject clear, and to enable the student or practitioner to apply the knowledge for the aid of the sick, and to omit all other material. The author has been concise but clear, he stresses common diseases and deals briefly with rare conditions, and throughout is practical rather than theoretical.

HEALTH INSURANCE WITH MEDICAL CARE. THE BRITISH EXPERIENCE. By Douglas W. Orr, M. D. and Jean Walker Orr. New York. 1938. The Macmillan Company. Price \$2.50.

Dr. Orr and his wife went to England and interviewed personally insured workers and their doctors. The results of their first hand survey are vividly set forth in this work. This work has a preface by David Lloyd George, former Premier of England, and intro-

ductory remarks by Helen Hall, president National Federation of Settlements in the United States.

MEDICINE IN MODERN SOCIETY. By David Riesman. Princeton University Press. 1938. Price \$2.50.

It is the author's belief that "the history of medicine is in reality an epitome of the history of civilization and should form a part of every man's culture." This volume is developed from a series of lectures known as the Vanuxem lectures which the author delivered at Princeton University.

CANCER—ITS DIAGNOSIS AND TREATMENT. By Max Cutler, M. D., Associate in Surgery, Northwestern University Medical School; Chairman, Scientific Committee, Chicago Tumor Institute; Consultant, Tumor Clinic and Director, Cancer Research, United States Veterans Administration, Hines, Illinois; and Franz Buschke, M. D., Assistant Roentgenologist, Chicago Tumor Institute; Late Assistant, Roentgen Institute, University of Zurich. Assisted by Simcon T. Cantril, M. D., Director, Tumor Institute, Swedish Hospital, Seattle; Late Assistant, Chicago Tumor Institute. 757 pages with 346 illustrations. Philadelphia and London. W. B. Saunders Company. 1938. Cloth, \$10.00 net.

In this work the author presents the essential clinical features of the more common forms of cancer. A survey of the available data has been made in order

to separate the evidence which appears sound from that which cannot withstand critical analysis. The real purpose of this book is to make accessible to the reader a critical evaluation of the pertinent facts in the diagnosis, prognosis and treatment of cancer as gleaned from the world literature and reviewed in the light of our own experience.

MODERN SURGICAL TECHNIC. By Max Thorek, M. D. Complete in three volumes. With 2174 illustrations with a foreward by Donald C. Balfour, M. D. Philadelphia-London-Montreal-New York. J. B. Lippincott Company. 1938. Price \$33.00.

This work is primarily intended for students, for general surgeons and for those general practitioners who are from time to time called upon to perform emergency operations.

Volume One, covers general operative considerations, surgery of the head and neck and plastic surgery.

Volume Two, covers surgery of nerves, vessels, bones, surgery of the breast and chest.

Volume Three, covers abdominal surgery, hernia, genito-urinary and gynecologic surgery.

While at first glance the work may appear voluminous, in reality such is not the case, as a matter of fact it is a concise work on surgical operations, up-to-date as regards important advances in surgical technic and including a sufficiently detailed description of each procedure in all commonly performed operations. The author has given clearly and concisely the high-lights of surgical anatomy preceding operating procedures. In describing operations the author has adopted the step-by-step method for the benefit of the student and the inexperienced operator. Some of the operative procedures are original methods, but for the most part they are the standard procedures whose value has been confirmed by time.

The volumes should prove indispensable to those who have the responsibility of surgery in their respective communities.

DRUG ADDICTS ARE HUMAN BEINGS. By Henry Smith Williams, M. D., with a statement of the narcotic problem. By Honorable John M. Coffee. Reprinted from the Congressional Record. Washington, D. C. Shaw Publishing Company. 1938. Price, \$2.50.

This work is the story of One Billion Dollar Drug racket, how we created it and how we can wipe it out. The author has spent five years in the investigation and study of the narcotic problem. Incidentally this work is the first complete and most authentic exposition of the subject of narcotic addiction in its various phases in the United States ever published. The United States is the only country in the world, outside of China, where narcotic addiction is a serious problem.

FEMININE HYGIENE IN MARRIAGE: By A. F. Niemoeller, A. B., M. A., B. S. with a foreword by Winfield Scott Pugh, M. D. New York. Harvest House. 1938. Price \$2.00.

THE NEW INTERNATIONAL CLINICS. Edited by George Morris Piersol, M.D., Vol. IV. New Series One (old 48). Philadelphia-Montreal-New York. J. B. Lippincott Company. 1938.

This is a book of original contributions; clinics; and evaluated reviews of current advances in the medical arts by outstanding physicians and surgeons throughout the United States.

CLINICAL LABORATORY METHODS AND DIAGNOSIS. By R. B. H. Gradwohl, M.D. With 492 illustrations in the text and 44 color plates. Second edition, St. Louis. The C. V. Mosby Company. 1938. Price \$12.50.

This is a text book on laboratory procedures with their interpretation. In this revision the author has eliminated the errors that appeared in the first edition, and omitted methods that are now considered obsolete or impractical; he has added the new methods which have proved useful and has given the fullest possible information on all worthwhile literature that has appeared in the last three years. He has improved the text by additional illustrations, both in black and white and in color.

PHYSICAL DIAGNOSIS. By Richard C. Cabot, M.D. and F. Dennette Adams, M.D. Twelfth Edition. Baltimore. William Wood & Company. Medical division of the Williams & Wilkins Company. 1938. Price \$5.00.

This work presents an account of the diagnostic methods and processes needed by competent practitioners of the present date. It differs from other books on the subject in that it makes no advance to describe technical processes with which the writer has no personal familiarity and gives no space to the description of tests which he believes to be useless.

This edition has been completely rewritten on a new basis that recognizes the progress of the present day physical diagnosis. It represents a full cross section of the best and modern knowledge and practice—the last word on fundamental aspects of modern medical practice.

THE MARCH OF MEDICINE. By Ray Lyman Wilbur, M.D. Stanford University Press. 1938. Price \$2.75.

This work is a compilation of selected addresses and articles on medical topics by the author from 1913 through 1937. The addresses printed in this volume tell of the problems confronting the profession during the years and, as their subjects indicate, report analytically upon the progress being made and point out the needs of the future. They constitute a panoramic view of the March of Medicine and as such will be of interest to many students and practitioners.

Serum Reactions are practically eliminated by administration of adrenalin in a dose of five minims immediately before intravenous injection of each 20,000 units of antipneumococcic serum diluted with 200 cubic centimeters of saline.—Cannon & Ewart, *Canad. M. A. J.* 38:481, 1938.



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—IRVING, NEW YORK STATE JOURNAL OF MEDICINE,
JAN. 15, 1938.

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—HINSHAW, JOURNAL-LANCET, AUGUST 1937.

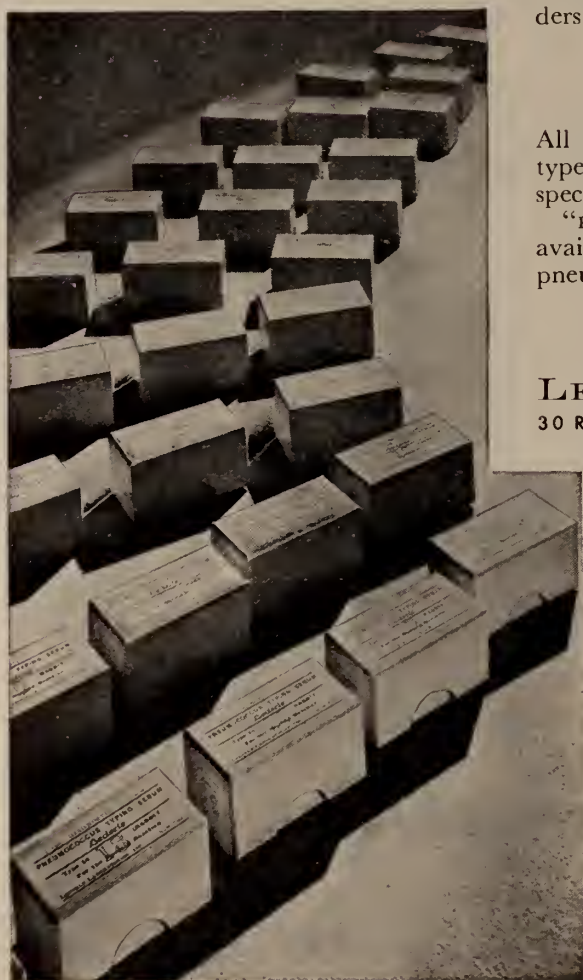
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—JOURNAL OF PEDIATRICS VOL. 13:278 (AUG.) 1938.

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—TOOMEY: JOURNAL OF PEDIATRICS VOL. 5: No. 3.
(SEPT.) 1934.

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—OXFORD MEDICINE VOL. 4: p. 817.

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CONTENTS:

Editorials (For Titles See Extended Table of Contents) 93

ORIGINAL ARTICLES

Cross-Cylinder re Refraction. *Philip A. Halper, M. D., Chicago* 115
Carcinoma in Clinically Benign Gastric Ulcer. *Max Mass, M. D., and Frederick Steigmann, M. D., Chicago* 120
Venereal Disease. *J. Howard Beard, M. D., Urbana, Ill.* 122
Cleft Palate Surgery. *Louis W. Schultz, M. D., Chicago* 127

Otologic Sepsis Including Meningitis. *Philip L. Aries, M. D., Chicago* 131
Value of Electrocardiogram. *James B. Berardi, M. D., Dwight, Ill.* 136
Factors re Chronic Blepharoconjunctivitis. *N. K. Lazar, M. D., Chicago* 141
Venereal Disease Control. *G. G. Taylor, M. D., Chicago* 146
Syphilis Control Program. *Noxon Toomey, M. D., Springfield, Ill.* 148
Chronic Nasal Sinusitis and External Operation. *Irving Muskat, M. D., Chicago* 153
Causes of Internal Hemorrhoids. *Charles J. Drueck, M. D., Chicago* 159

(Continued on page 26)

NINETY-NINTH ANNUAL MEETING AT ROCKFORD, MAY 2, 3, 4, 1939

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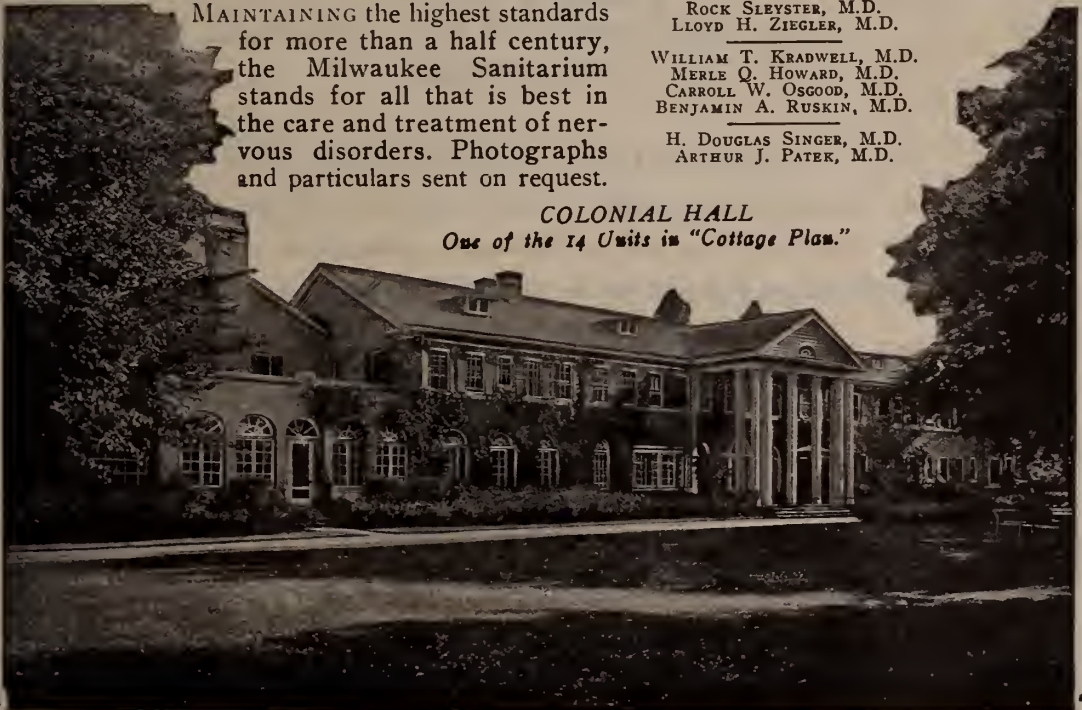
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RECENT ADVANCES IN THE SCIENCE OF NUTRITION

VI. The Chemical Identification of Thiamin or Vitamin B₁

● An outstanding accomplishment of American Biochemical research has been the chemical identification—by degradation and by synthesis—of thiamin or pure vitamin B₁ (1). Thus, another dietary essential long known by its physiologic functions has been identified chemically, in this instance as a quaternary thiazole.

This discovery is of the most basic importance in the field of vitamin B₁ research. Determination of the chemical nature of this factor permits not only explanation of certain previously known facts concerning vitamin B₁, but in addition, has opened new fields of research. One of these is already concerned with the development of a reliable chemical method for estimation of thiamin which will be generally applicable to foods.

At present, quantitative determination of vitamin B₁ necessarily requires the use of one of the several bioassay methods available for that purpose. None of these is entirely satisfactory (1, 2). Perfection of a chemical method for quantitative measurement of thiamin in foods would add greatly to our knowledge of its occurrence in nature,

as well as permit more comprehensive studies of factors which might influence the stability of vitamin B₁ in foods. We have a relative paucity of such data relating to vitamin B₁ when the available information on vitamin C is considered.

It should also be stated that the synthesis of thiamin—which is now produced on a commercial basis—has already provided the clinician with a most useful diagnostic tool. Administration of the pure vitamin in cases of suspected thiamin deficiency, with notation of the therapeutic response, constitutes the most trustworthy means of detecting avitaminosis B₁. After the diagnosis has been confirmed and the immediate deficiency corrected by administration of thiamin, it is desirable that future adequate supply of vitamin B₁ be obtained through dietary readjustments (1).

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- (1) 1938. J. Amer. Med. Assn. 110, 727.
 (2) 1938. Ibid. 111, 927.
 (3)a. 1936. J. Nutrition 11, 383.
 b. 1936. J. Amer. Diet. Assn. 12, 231.

- (4)a. 1932. J. Nutrition 5, 307.
 b. 1932. Ind. Eng. Chem. 24, 457.

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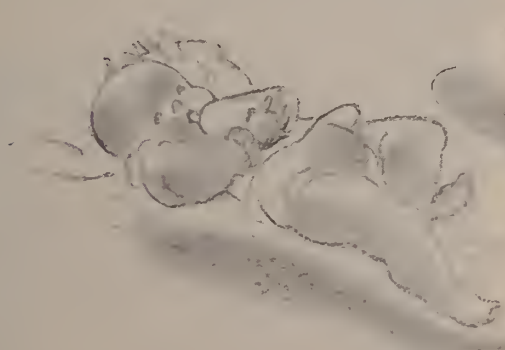
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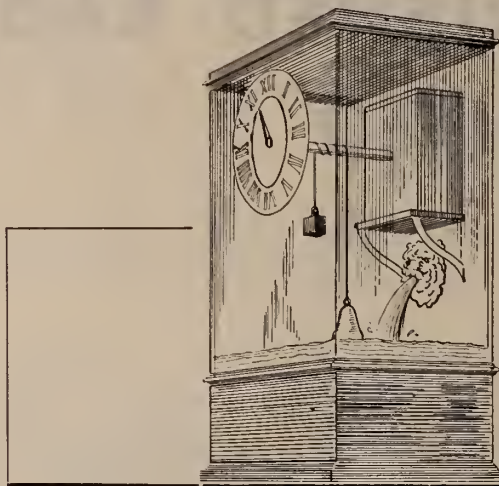
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¹ Sevringhaus, E. L., and Evans, J. S.: *Am. J. Med. Sc.* 178:638, Nov. 1929.

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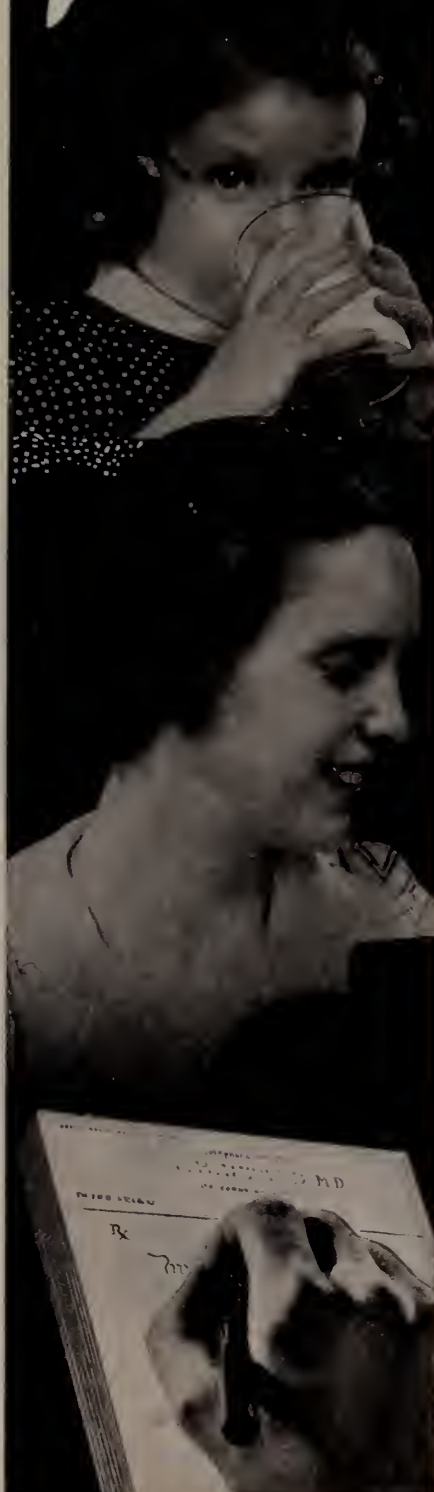
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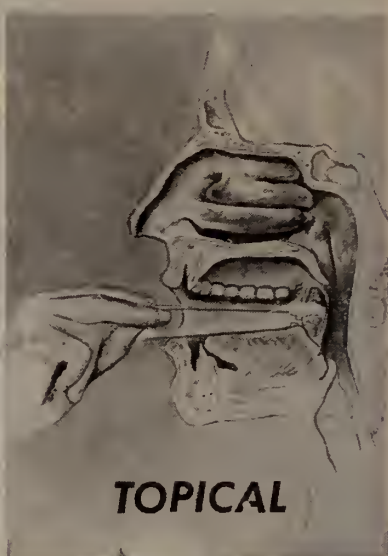
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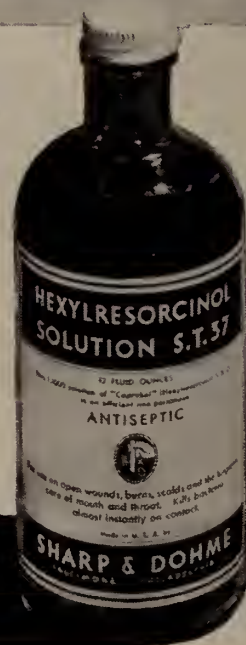


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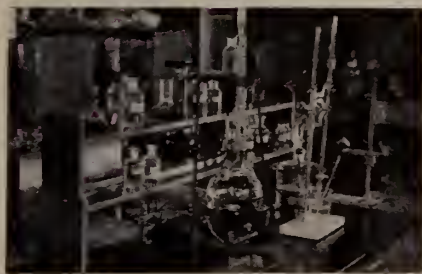
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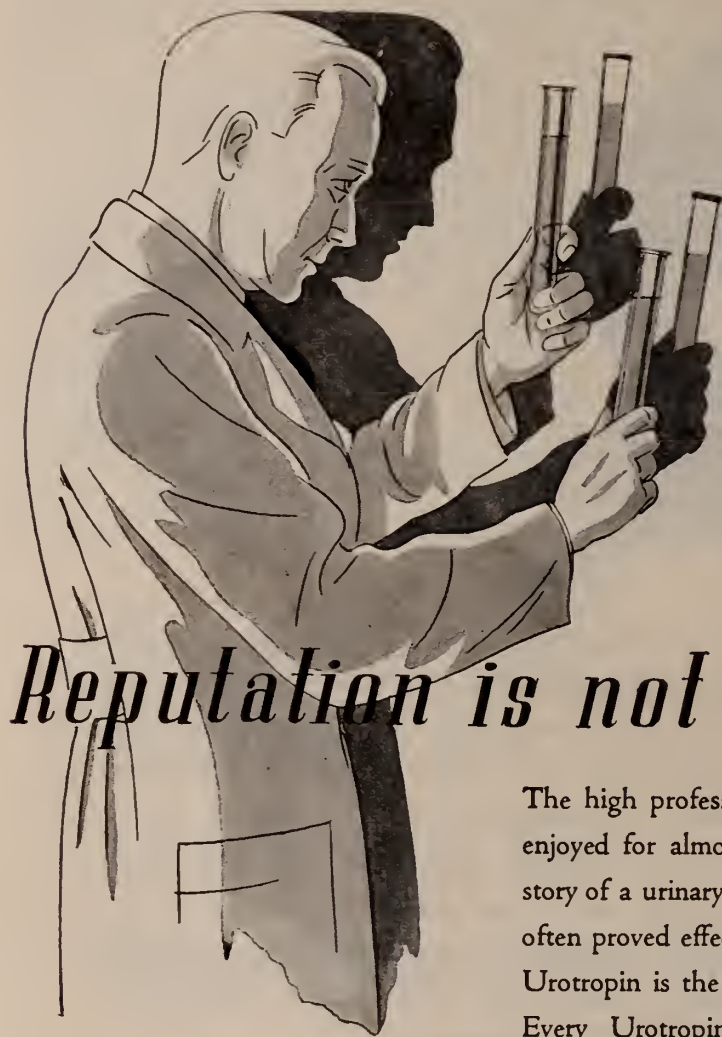
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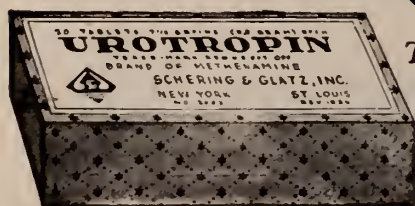
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*Witts, L. J. — "The Therapeutic Value of Iron," *The Lancet*, Jan. 4, 1936.

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Editorials

NO FINER RELATIONSHIP EXISTS THAN THAT BETWEEN DOCTOR AND PATIENT

There are few, if any, relationships in life more individualistic than that between Doctor and patient. In the ordinary case, the selection of the doctor is a free choice, and on the other hand the doctor serves without compulsion. Both are free agents. The relationship is one of mutual confidence. It may be terminated by the will of either at any time. For these reasons, it is natural to believe that in the medical and dental professions individualism will continue to find stout champions, both as doctors and as citizens.

And the more you champion individualism in dentistry, the better citizen you will be.

Outside of the home, school and church, life does not afford a finer relationship than the relationship between doctor and patient.

Hon. Samuel B. Pettengill,

Bulletin of the Chicago Dental Society,
March 10, 1938.

TRYING OUT SOCIALIZED MEDICINE ON THE FARMERS

Trying it out on the farm instead of on the traditional dog, is exposed as among the many desperate measures attempted by radicals in power at Washington to socialize American life and American institutions. That these measures are waged at the expense of national health as well as morale, apparently mean nothing at all to greedy opportunists to whom the overthrow of the world's greatest nation is as the childish toppling of a house of cards.

That conservative publication, *The Saturday Evening Post* that was born when the republic itself was young and that introduces itself as "An American Institution," carried a revelatory article in its issue of December 17, 1938. Captioned "Rehearsal for State Medicine" and

signed by Samuel Lubell and Walter Everitt, by especial permission of *The Saturday Evening Post*, copyright, The Curtis Publishing Co., generous excerpts are reprinted here. A great many of us, even those as near the Dakotas as are residents of Illinois, probably have not realized the extent of the effrontery from bureaucracy forced upon the farmers there, and on the way to further extension.

The article begins as follows:

"On October thirteenth, reporters covering the Department of Agriculture were handed a three-page press release announcing the approval of plans to provide emergency medical care for 77,000 Farm Security Administration clients in North and South Dakota for two dollars a month.

"The handout quoted Administrator W. W. Alexander as basing the programs on the experiences of the FSA with similar plans 'in these and sixteen other states,' and developing them because it was found that 'good health is a necessary part of a family's rehabilitation.' *The FSA's maiden name, you will recall, was the Resettlement Administration.*

"Tucked away on the last page of the release was this single sentence: *'The pooling of funds serves as a form of voluntary insurance against disaster for the patient and against unreasonable hardship for the doctor.'*

"*Thus was the paying public let in on the secret that, though Congress and the nation are still debating the prickly issue of state medicine, one Federal agency has jumped the legislative gun and instituted its own program of socialized medicine.* While doctors and lawmakers and the millions who will be affected have been weighing the pros and cons of the question, the Farm Security Administration has been fostering a system of health insurance that today is guaranteeing or subsidizing the medical bills of perhaps half a million farmers, their wives and children—and occasionally visiting relatives.

"*Working with unaccustomed modesty and publicity shyness, the FSA, in effect, has staged a gigantic rehearsal for health insurance.* It has brought together some 3000 country doctors and more than 100,000 families in twenty-odd states. It has given them a chance to show what would happen if a health-insurance law were enacted for them tomorrow. And the performance has

been truly startling. Friends and foes of socialized medicine alike will be surprised.

"Something like 150 of these health-insurance cooperatives have been peppered around the country in the last two to three years. Most of them cover between 100 and 200 households. Those in the Dakotas have been caring for 58,000 families. As announced by Doctor Alexander, 19,000 more eligibles have been added, bringing the total to one half the farm, or about one fourth the entire population of the two states. Our newly elected Seventy-sixth Congress may be asked to decide whether this country wants some form of state medicine, but the Dakotas have it.

"Although styled cooperatives, none of these groups whose tribe increaseth weekly really has any identity apart from the Farm Security Administration. They have been financed by FSA loans, organized and managed by the agency's personnel and their members drawn from FSA clients. These are farmers a shade or two above the relief level, with cash incomes of generally less than \$500, and who have been deemed worthy of rehabilitation.

"By the end of June, Dr. R. C. Williams, FSA's medical adviser, figures on having 150,000 of the half million Farm Security families in the country in his fold. In more optimistic moments he numbers his potential flock at 200,000 farmers, nearly 1,000,000 persons with their dependents. Averaging about twenty-five dollars per family, as he estimates, that would run this year's tryout to between \$3,000,000 and \$5,000,000.

"FSA health-insurance cards already have come to mean bread and butter to several hundred doctors, cake to more than 2000. They have been accepted by physicians 1000 miles away and in Canada. A single year's work with a submarginal Arkansas group is credited with the dubious boon of bumpering the baby crop by 50 per cent. Some co-operatives soon will celebrate their third birthday; others have been buried deep under heaps of unpaid bills. Identical plans are being hailed as the salvation of farmer and doctor, and denounced as 'making chiselers of both patient and physician.'

"As the biggest group-health venture ever undertaken in this country, fathered and financed by a Federal agency, what the FSA is doing affords a rare glimpse into what the future may

bring. A fair review of what has happened should help in deciding whether health insurance is good or bad. That is the purpose of this article—to swing the spotlight on a performance that, until recently, was diligently shielded from public view; to present the facts, letting the morals point where they may.

"That these health associations have been set up at all and in such abundance is astonishing in itself. For several years leaders of organized medicine have waged an unceasing fight against the perils of state medicine. Many doctors did repulse the FSA's blandishments as 'an entering wedge to regimentation.' Yet, through it all, one man—a former Alabama physician who never could summon courage enough to collect bills from his patients—managed to sell twenty-one of the forty-eight state medical societies some form of health insurance.

"True, the programs weren't labeled as such. But to Dr. Ralph C. Williams health insurance by any other name has been just as sweet. As author, director, chief prompter, leading actor, and suppressor of publicity, Doctor Williams has turned in an amazing personal performance.

"To describe in full the varied Williams repertoire would be like droning through a catalogue of health-insurance schemes. Fortunately, virtually all the action has centered around two types of organizations—state corporations and county pools.

"Largest and most successful of the state-wide co-operatives is the Farmers Mutual Aid Corporation of North Dakota. Until recently the FSA advanced the corporation one dollar a month per family to cover emergency medical care. A uniform fee schedule, roughly one-third under the regular rates, was agreed upon. Doctors submitted their bills, which were prorated against the money available each month. Under the revised program, effective as of November first, the FMAC will be advanced two dollars per family each month, and services will be expanded to include hospitalization, emergency dental work and drugs. Doctors are to get 51 per cent of the money, hospitals 37 per cent, dentists 8, and druggists 4 per cent.

"South Dakota's Farmers Aid Corporation will differ only in the distribution of funds—51 per cent to doctors, 30 per cent to hospitals, 15 per cent to dentists, 3 per cent for drugs and 1 per cent for home nursing. Also modeled after

the FMAC, the Agricultural Workers Health and Medical Association was established last summer to furnish emergency care for about 30,000 migratory farm families in California and Arizona. Doctor Williams described this work to us as 'really just giving relief' and 'terribly expensive.' The initial grant was \$100,000.

"Throughout the South about 12,000 families have been organized into county co-operatives. Loans are made by the FSA on a sliding scale of ten, twelve and fourteen dollars per family, depending on ability to pay, plus one dollar extra for each person up to eight. Above eight there is no charge. Each county co-operative maintains its own pool, divided, as in the Dakotas, into equal monthly allotments. Generally, 20 per cent is set aside for emergencies and hospitalization.

A DOCTOR BY THE YEAR

"Doctors charge their regular fees, but face prorating if the total bills exceed the quota. No cards are issued, physicians receiving lists of eligible clients. Except for a few counties where families are expected to or have agreed among themselves to use one man, free choice is permitted.

"Arkansas alone, according to Kennedy, had pools in fifty-nine of its seventy-five counties, embracing 6500 farmers, on October twenty-fifth. He estimated that number again was covered by more than fifty pools in Mississippi, Texas, Alabama, Georgia and Tennessee. State medical societies in New Mexico, Colorado, Louisiana, North Carolina and Virginia also had approved the plan, and additional pools were being formed there.

"A third type of program is being tried by the FSA with about 2800 families in twenty-three counties in Missouri, Indiana, Ohio and Iowa, but so new is it that it hasn't undergone a real test. Still the scheme will bear watching. The patient selects a doctor and brings his entire family in for thorough examination. The doctor estimates the medical needs, the FSA the family's ability to pay. A maximum sum is arrived at for which the physician agrees to furnish regular home and office care—major surgery and hospitalization are excluded—for a full year.

"The money advanced by the FSA is deposited with a specially appointed trustee, but is not pooled. Nor does the doctor necessarily get the

entire budget allotment. He submits his bills at regular fees and is paid by the trustee. If, at the end of the year, any part of the money is left, it is returned to the patient. Where funds are exhausted, however, the doctor agrees—to quote from the Mercer County, Missouri, plan—to continue to render services for the rest of the one-year period without additional compensation.'

"Just past fifty, soft-spoken, partially bald, Doctor Williams looks and acts the picture of mild inoffensiveness. He collects Confederate stamps for his son and lets his wife buy his panama hats. His \$6816-a-year salary enables him to maintain a comfortable home in the Chevy Chase section of Washington. He practiced medicine in Alabama for four years before the war. With almost prophetic reasoning, he chucked it for public-health work. As he recalls it now, 'I liked treating people, but couldn't bring myself to ask them for money I knew they needed more than I did.'

"After three years with the Alabama State Health Department, Doctor Williams decided to try for the U. S. Public Health Service. His chief, a one-time surgeon in the Confederate Army, was so outraged at the idea of a son of Alabama wanting to work for that 'Yankee Government,' that Doctor Williams had to quit outright and spend several jobless months in Washington boning for the Health Service examinations. He passed them in 1917, in time to be placed in charge of a soldiers' camp in Illinois. The 1920 Health Almanac which he compiled was still wet off the presses when several cases of bubonic plague broke out in New Orleans. Doctor Williams was sent down to rat-proof the old city. His later assignments were more to Mrs. Williams' liking—personnel work in Washington, field inspection and, in 1927, as Assistant Surgeon General, editing reports. The post carried with it the unofficial duty of serving as the Health Service's 'luncheon speaker.' In nine years Doctor Williams addressed almost 200 groups. It was a training that was to stand him well after he was loaned to Resettlement in 1936.

"However shy Doctor Williams may have been in dunning his patients, no such timidity has possessed him in dealing with his medical colleagues. The very diversity of the programs suggests that he has known when to compromise

and when to drive a hard bargain. In South Dakota he took advantage of the economic distress of the physicians to hammer home a trade that was too tough to stick. For one dollar a month per family he asked essential medical care, hospitalization, emergency dental work and drugs—the things being paid two dollars a month for now. Like hungry actors, the doctors accepted their meager bits. When bills began to be prorated 50 and 60 per cent, they walked out on the producer.

"The pooling plan was the Arkansas Medical Society's peace offer, if the FSA would agree to terminate contracts it had worked out, verbal and written, with fifteen doctors in the state. Where the opposition of the doctors was most bitter, Doctor Williams took what he could get—the budget scheme."

Yes, "The Budget Scheme." From even the abridged quotations here, the name would be more appropriately called "The Badger Game."

MEDICINE IS A WELL-DEFINED PROFESSION

The District of Columbia Medical Society has asked the United States District Court at Washington, D. C., to render the decision as to whether the practice of medicine is a "science" or a "trade" within the meaning of the Sherman Anti-trust act.

In this request the medical society pointed out that "the practice of medicine and surgery is a well-defined profession and it has been recognized and accepted as such generally by the courts of the United States, including the United States Supreme Court." Further that the practice of medicine "is separate and distinct from any of the callings or occupations which may be denominated "trade."

The Medical Society submitted the request to the courts as a part of their defense in connection with the recent grand jury investigation of what is called "the activities of that society and the American Medical Association involving Group Health Association, Inc., a medical co-operative formed by employees of the Home Owners Loan Corporation."

It is perhaps pertinent to inquire again why the government activities focus themselves so strongly on medicine in the battle for the underprivileged. What about dentists, druggists,

nurses, newspaper services and the men who manufacture and sell clothing, accessories, food, shelter and amusements?

"Why?"

"Echo answers 'Why?'"

EDUCATE THE LAITY AS TO THE EVIL OF TAX SUPPORTED MEDICAL PRACTICE

Physicians have double work to do at the present time in educating the laity as to the evils of government controlled medical practice and allied fallacies because so many doctors have played the sluggard in this regard for so long a time.

An intensified public relations campaign explaining medicine and its works to the laity is needed now. It would be an eleventh hour remedy but it's worth the trying before the great and gullible American public is sold completely and irretrievably "down the river" of socialized medicine.

Wisely has it been said:

"For years the medical profession has failed to take the leadership in molding public opinion. This applies to a degree to every community. The public hasn't warmed up very much to aloof physicians and their viewpoints. Valuable contacts have been overlooked—even avoided. This situation can be corrected by the medical profession itself through the efforts of individual physicians.

"The most important and effective kind of public relations can be carried on daily by individual physicians. If the physicians in a given community are unable to get adequate publicity in the local press, arrange for opportunities to present their views before lay groups, and win the confidence of the people, there is no chance of accomplishing these things through a second-party, regardless of his ability and influence.

"Organized activity and the use of competent outside help are useful and necessary factors in any public education campaign but they are of secondary importance. The major role must be played by the members of the medical profession themselves. The outcome will depend pretty largely on how well they do their job.

WHAT HELPS BUSINESS HELPS THE DOCTOR

Merle Thorpe in *Nation's Business*, December, 1938, under the title, "Let's Keep the Brakes in Good Order" says:

Wherever an attempt has been made to overthrow a social order, whether an American revolution or a German putsch, the revolutionists invariably follow two lines of attack. One is to kindle hate against those who symbolize the existing order. The other is to enlist the physical force to get control.

We see illustrations wherever we look. In Russia, Lenin fired the workers and soldiers with deadly hate of aristocrats, land owners, and the intelligentsia. In Italy, Mussolini fanned Italian emotions to white heat by stigmatizing strikers and others of his old friends in the labor unions as Communists seeking to Russianize Italy. Hitler imbued the Germans with loathing of the Jew as the personification of all evil.

We are changing our social system in the United States, and by the same methods. Whether for good or ill, there can be no mistaking the historic technique of revolution.

Our hate campaign has been directed at business and the business man. Seldom a day has passed or an hour on the radio that the public has not been exhorted to hate business. Bankers were "money changers" to be driven from the temple; investment bankers appropriated the widow's mite without conscience; the "power trust" was bleeding the people white; commercial aviation was without morals; manufacturers were exploiters of child labor, operators of sweat shops and labor tyrants; lumber, oil and coal men were "barons"; stock and grain exchanges were gambling houses; retailers were gougers and chisellers; steel and chemical companies, fomenters of war; railroads mismanaged; telephones, too much power for the public good; and the stage now set to complete the cycle by harassing insurance institutions. Lawyers, newspapers, every agency of free opinion which might counteract the campaign of hate have been abused.

No epithet Hitler could invent to describe the Jews was more hate-arousing than those we applied to business men. Perhaps the high point was reached when a federal administrator called them "little men with rodent blood in their

veins." Our newest administrator was milder when he called the employer who couldn't pay the fixed wage "indecent."

To harvest the sowing of hate and overturn the established order; revolutionists must march with muskets. Black shirts, brown shirts, secret orders, storm-troopers, seizure of the army, their part we all know. But we, being a wealthy nation, do it differently—as Professor Tugwell said in an unguarded moment, by "subterfuge"—painlessly, but just as effectively. Our muskets are money.

The head of P.W.A. does not march with armed men into 124 municipalities to confiscate private power plants. He marches in with \$160,628,752. Retail stores are not taken over by force as in Russia; we establish competitive cooperatives with money that was appropriated "to relieve distress." Banks do not yield up their buildings to armed forces, they deliver their depositors' money to the Secretary of the Treasury, and face competition in 19 great federal lending agencies.

We, as American citizens, would fight an overturn to the Fascist state by armed troops. yet, we have complacently viewed the march which has taken us three-quarters of the way down the road to Fascism. Washington today controls and allocates most of our working capital; it fixes wages, fixes hours, and prices, and in 250 different lines of business. Washington is moving surely into state capitalism that marks the totalitarian countries of Europe.

Those who deplore the changes taking place in our American system of free enterprise should continue to help dispel the hate against business, should join the movement to show that business is beneficent, not malevolent, that "What helps business helps you," and, second, move to deprive the revolutionists of their muskets by demanding tax reduction and that expropriation of savings through federal borrowings be stopped.

Recent events show that democracy can apply the brakes, but there must be no let-down in keeping the brakes in good working order.

THE 1939 ANNUAL MEETING

Arrangements are now well under way for the 1939 Annual Meeting to be held in Rockford, May 2, 3, 4, with headquarters at the Faust Ho-

tel. All section officers, local committees and others responsible for the programs to be presented, are working diligently in their efforts to make this an outstanding meeting. Both the scientific and technical exhibits will be displayed in the Faust Hotel—and all section meetings will be held there. The Hall of Health will be conducted in a large nearby building and will be open to the public for the entire week, or from May 1 to 6, and will remain open until 9:00 P. M. each day.

Two scientific sections have been added during the past year with the consent of the House of Delegates,—Section on Pediatrics and Section on Obstetrics and Gynecology thus making a total of seven scientific sections which will conduct their own individual meetings.

The Secretaries' Conference which has formerly been held on Tuesday morning will be conducted this year as a dinner meeting on Tuesday evening. The officers of the Conference are arranging an interesting program which will be sent to all secretaries in the near future and will be of interest to all members of the society even though they are not officers of the county medical societies.

The preliminary program for the meeting will be published in the March ILLINOIS MEDICAL JOURNAL and the official program will appear in the April number of the Journal, owing to the fact that the meeting date is the first week in May.

Reservations are now being made by the Rockford hotels and it is advisable for all members expecting to attend the annual meeting to write to the hotel committee telling the type of accommodations they desire, and same will be promptly secured. A list of this as well as other local committees is printed in this number of the ILLINOIS MEDICAL JOURNAL.

It is hoped that every county medical society in Illinois will be well represented at the annual meeting in Rockford, and more information concerning the meeting and the preliminary program will appear in the March ILLINOIS MEDICAL JOURNAL.

TAKES NO CHANCES

He: "When I left my last boarding place, the landlady wept."

Landlady: "Well, I won't need to. I always collect the rent in advance."

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
W. M. Hartman, M. D.
J. R. Neal, M. D.
I. H. Neece, M. D.

Edited by the Committee on Medical Economics
of the
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Address all letters and communications to the Chairman.

The promptness with which Senator Wagner had a Bill to present to the Senate for action after the recent message of President Roosevelt on the subject of the extension of medical care should convince the most skeptical in the medical profession that the plans are already on the way for an attempt to change the manner in which medical care is to be delivered to the public. The suggestion in the message of the President are practically identical with those of the Interdepartmental Committee, which met last summer in Washington. If the recent action of the House of Delegates of the American Medical Association, followed by the conference of its appointed committee with Miss Roche and her committee, had any results they are not visible at this time.

Of course, the outcome of this entire attempt is impossible to prognosticate at this time. From the action of both the House of Representatives and the Senate on the appropriation bill for the PWA, it is evident that Congress is asserting its rights and assuming its responsibilities to a degree that has been sadly lacking for the past six years. If this independence of action can be increased to the point where all legislation will be considered fully and decided on its merits, there is hope. However, a return to the MUST SYSTEM of recent years would spell disaster for the public as well as the medical profession.

The propaganda mill for such legislation has been going at full speed the past few months. Scarcely a newspaper or periodical has failed to have articles, if not editorials on this subject. Unfortunately a large percentage of the magazine articles have been blatant propaganda by experts. While such articles do not fool the medical profession, the casual reader must be impressed by both the number and the readability of the articles. They cannot be expected to be able to extract the real truth from the

articles. The medical profession is not without friends. The *Chicago Tribune* of December 31, 1938, had a most fair editorial on the dangers of the proposed plan for the socialization of medicine and explained most clear and fully the dangers of the proposed plan to the public, the medical profession and the form of government. It would be well for every member of the medical profession to reread this most able article.

The magazine, *America's Future*, has contained two most excellent articles in the last two issues of the dangers of the proposed plan. The first was referred to in last month's article. This month, Dr. Charles Gordon Heyd of New York has a fine article on the subject, "Do you want your own Doctor or a Job holder?" The American Medical Association has sent out a large number of copies of this issue of *America's Future* and it is to be hoped that most of you have read the same.

The *United States News* continues to have frequent articles on the subject of Socialized Medicine. While not always in agreement with their policy and editorials, we must admit that they have been most accurate in their reports and prognostications. They think that some legislative action will be taken on this subject by the present Congress. We hate to admit the accuracy of this statement, but we should be ever on the alert to verify or refute the same. Also, we should continue to use all our influence on our representatives in Congress to stop any action during the present Congress. The exact manner of exerting this influence is highly debatable and must be decided by the individual. But certainly every legitimate opportunity should be seized to present to the members of the Congress, both the reason for the opposition of the medical profession as well as the practical agreement by the entire medical profession of the country to opposition.

The Public Relations Bureau of the Medical

Society of the State of New York have recently printed a small pamphlet by J. Weston Walsh entitled "On the Witness Stand." It is a most complete answer to the numerous questions that are asked the medical profession by the laity on this subject. These can be obtained from the above named society at 2 East 103rd Street, New York City, for seven cents each in order of fifty. There is no better way that a County Medical Society could spend a few dollars than to order enough of these pamphlets to furnish a copy to every member of the medical society as well as a few extra for the interested laity.

The annual meeting of the Northwest Regional Conference will be held at the Palmer House in Chicago on Sunday, February 12, beginning at 9:00 A. M. This will be attended by medical men from all of the states in this part of the United States. There is no definite membership and anyone interested in Medical Problems is most welcome. It would seem that the officers of County Medical Societies would be most amply repaid for the time necessary to attend such a meeting, for all of the live problems will be presented for discussion. We hope that there will be a fine representation from Illinois.

Through the kindness of the editors of *Nation's Business* we are presenting this month an article by Ernest L. Shore, B.S., M.D., entitled "A Doctor Looks At Socialized Medicine." It is an able article well presented and worthy of the time and attention of every man to whom this JOURNAL comes. It has already been sent to the members of the Council and has been much appreciated. Try to read it.

DO NOT FORGET THE MEETING OF THE NORTHWEST REGIONAL CONFERENCE AT THE PALMER HOUSE, CHICAGO, FEBRUARY 12.

E. S. Hamilton, M. D.,
Chairman.

DOCTOR LOOKS AT SOCIALIZED MEDICINE

The question, "How can medical service be assured to all?" is just one of many which those with Utopian aspirations now propose. Proposed answers usually take the form of some cooperative health scheme. All these schemes, I have found, have one invariable feature in

common. Those who pay the money assume an extra burden—paying for those who manage and spend the funds. All that they hold out to the paying contributor is the gamble that he will receive more than he pays for. As in most gambles, the odds are against him.

It makes no essential difference if a government bureau manages the assessments. In any case the funds are controlled by people who have not had to earn them. In any case there is a vast difference between spending one's own money and somebody else's. That is why those who want good medical service when they need it keep the mastery of their own dollars. That way they can reject unsatisfactory service. They do not have to pay twice to get adequate service, because "He who controls the purse calls the tune."

There is much to be said for the collective principle where accidental injury or death is concerned. Here it is obvious and tangible when something has happened. But what constitutes sickness? The difference is that nothing need happen to an individual for him to obtain service. A person becomes "sick" of his job, of his environment or his family relationships. He goes to see the doctor who, after much questioning and examination, declares he is not sick. The physician renders service in determining the absence of sickness and should be paid on the basis of each service. This is not true under any form of social medicine.

PSEUDO-ILLNESS ENCOURAGED

UNDER medical relief administration, bureaus often request examinations and opinions when no illness is to be found. If the doctor didn't prescribe, he is told no compensation is due him. This encourages doctors to falsify. It is the experience of representative physicians in Germany and Austria, under socialized medicine that 70 per cent of the persons visiting their offices are not sick. They say that not more than five per cent of these are conscious malingerers. But the result is that in one seven year period the use of x-ray increased 20-fold.

This does not represent actual illness, but a desire to get something back for something paid. Hospital admissions in the United States run less than eight per cent of the population. It is a great mistake to expect 92 per cent of our people to pay hospitalization insurance, either

into cooperative funds or in taxes for a government bureau, and receive nothing in return. But human nature in this country is not greatly different from that in Europe. Already we can observe the same signs here. Hospital admissions in 1937, under increased relief administration, and with more hospitalization groups, exceeded 1936 by 2,000,000. Many of these people could have remained at home and obtained the same recovery at less cost to society.

It probably would require a generation of social medicine in this country to destroy that sense of personal responsibility for which our people have been noted and to develop in its stead the greediness, the feeling that assessments create a right to service, which are concomitants of social schemes long in effect in some European countries. Social medicine creates its own illnesses. It makes of the doctor a policeman guarding the treasury against his patient. The patient is trying to make his complaint look big in order to get as much as possible for his—and other people's—money. This breaks down the mutual confidence between doctor and patient which spells efficient service.

Bureaucrats believe that medical service can be standardized as a can of tomatoes or a keg of nails. But it will differ as individuals differ, in all gradations from the failure to the perfect. It follows that those giving the more thorough and lasting service will ask greater rewards than those doing inferior work. But with bureaucratic control, compensations are fixed the same for skillful and unskillful performance. As demands become too great for the treasury to bear, will the fund managers reduce their own salaries? No, the first reductions will be made in payment to the doctors and hospitals. With poorer rewards the quality of medical service will be reduced.

The European doctor under social medicine approaches his day's work with the sense that he is primarily a clerk in the government bureau. He obtains his stipend whether or not he serves well. He realizes that, in some fashion, he must serve from 40 to 80 patients a day and he is impressed with the futility of it all. In Germany I am told it is not uncommon for a doctor to see 80 patients in one afternoon's office period. Under such circumstances a patient

gets "a look and a bottle." Even the moderately sick are shunted off to the hospital.

INSURANCE IS MORE COSTLY

DIRECTOR Weber of the Union of Insurance Bureaus of Aix la Chapelle, Germany, reported in 1928 that in Germany, "35,000,000 insured pay four times as much as 30,000,000 not insured. The insured patient uses three times as much medicine."

Office holders in the medical administrative personnel exceeded doctors in 1935.

In England only those panel doctors in the patient's area are available to him, and once designated, he cannot change for a year. Records of his ailments are public property. He is no longer an individual, but one of 50 or more requesting attention. When hospitalization is necessary there is no choice. Only general practitioner service is available. To obtain a specialist requires approval of the supervisor, whose business it is to conserve the funds. The patient is dependent upon a robot who takes his orders from a government-directed insurance cooperative.

The Secretariat of the League of Nations has declared the United States to be the healthiest nation in the world. In the face of this record, social system advocates try to sell the country on procedures rather than results. Their method erroneously presumes that when the *quantity* of medical service is increased the *quality* will remain constant.

For many years it has been accepted that, in a given year, 40 per cent of the people of this country visit no one for their health. From this it is reasoned that from 40 to 50 per cent cannot afford medical service. The truth is they either do not need such service or else do not want it. Conflicting figures in some of recent surveys made at great waste of the tax-payers' money appear to be the result of coloring to suit the socialist objectives of those higher up.

Already we are being carried a long way toward the socialization of health services in America. In addition to the wide variety of county and state institutions; the tax millions that go to subsidize private hospitals in the upkeep of their public wards; county, city, state and federal public health departments; medical departments of the Army, Navy and National Guard; and the colossal expenditures for the

benefit of war veterans, we now have medical features in Social Security and relief administration.

The annual tax bill to support all these activities runs to a stupendous figure. Therefore it should be realized that so-called free services are not free. They must be paid for, always with an additional 30 to 40 per cent for administration and inefficiency. It costs Atlantic City, for instance, \$32,380 to administer \$108,000 in one year.

With all these billions spent collectively for health, why are we not a nation of perfect people, physically? Why are we instead so much in need of a biological purge? Because it is impossible to buy our way to perfect health. There is a large hereditary factor in health. Statutes will not make the public medical minded, however available they make advice and help.

These social schemes are not inventions of the organized medical profession. They are part and parcel of the cooperative experiment called socialism or collectivism which attempts to avoid the rigors and chastisements of Mother Nature in her effort to improve the human race. It is not new; decaying civilizations have destroyed themselves in the effort to preserve the weak at the expense of the strong.

Just now we hear much of three-cents-a-day hospitalization schemes. Private insurance is based on risk and frequency with which benefits are used. The more hazardous an occupation is, the higher the premium rate for a definite coverage. These group hospitalization plans ignore such precepts of insurance. They discard both risk and ability to pay and are therefore economically unsound.

The three-cent rate is based on an expectation of approximately 6,000,000 hospital admissions a year but they are increasing so rapidly that in 1937 there were 10,000,000, and in a few years, under the present socialization impetus, it may easily reach 15,000,000. That will bankrupt the socialization plans. Then the politician will step in with government subsidies, because he sees a great source of power waiting to be capitalized.

Civilization's greatest handicap is the fact that it cannot withstand the promulgation of fool ideas oft repeated. Liberty has nowhere

been so prostituted as by government, in the name of social justice. When once given to government, liberties rarely can be recovered. Bureaucracy once established is seldom abolished. Usually it is absorbed by some larger and more powerful bureau. Such is its self-perpetuating character.

The cost must be paid entirely by individual effort. Those who have tasted power do not want to return to that community of effort upon which government feeds. Instead, they keep on maintaining themselves by dispensing new jobs—unearned plums—to their supporters.

City, county, state and federal governments are symbols which mean you and me, yet the average person when given a chance at the public treasury will dissipate the funds as freely as if the government were a separate entity with independent earning power. Really it is the most hungry parasite that saps the fruits of our labors. Today about 30 per cent of the people's income goes to its support. Government's unlimited taxing power is the power to destroy. The more people in government the more who are removed from production, the fewer the producers left to carry the load.

LEAVE A CHANCE TO ADVICE

We must unshackle the individual and permit him to move forward to meet his necessity, because it is by the stimulus of necessity that civilization advances. Eliminate all the licensing systems not definitely necessary for the protection of society. Remove all unnecessary controls and restore government to its rightful principal function of police duty.

Let us beware least, in our desire to be kind to the weaker brethren of today, we are more than unkind to the brethren of tomorrow.

The right sort of medical service can best be assured to all by keeping the mastery of our own dollars. The future of public health must center around the family physician who with his bag and office equipment still cares for 92 per cent of the nation's illness.

The treatment of illness must remain a profession. Now what constitutes a profession? Personal service! It cannot be standardized. There is an intellectual character to this service, with considerable self-direction and individual responsibility. There can be but one master in

the House of Medicine and that is the doctor himself.

ERNEST L. SHORE, B. S., M. D.

WINNEBAGO COUNTY MEDICAL SOCIETY

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N. C. Bullock, W. K. Ford, E. H. Weld

Reception Committee

All members of the Winnebago County Medical Society

Registration Committee

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Information Committee

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SPECIAL MEETINGS

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Sidney D. Wilgus Warren C. Ives

Medical Women's Committee

Ruth Leonard, Chairman

Anna Weld Clara E. Hanstrom

Illinois Medical Editors Committee

W. H. Elmer, Chairman

R. J. Mroz E. W. Fell

*Central States Society of Industrial Medicine
and Surgery Committee*

C. A. Cibelius, Chairman

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Secretaries' Conference Committee

William K. Ford, Chairman

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COMMENTATORS SPREAD FALSE NEWS

In newspapers throughout the United States on Sunday, January 8, the column written by Drew Pearson and Robert Allen entitled "Washington Merry-Go-Round" contained the following item:

MEDICAL SOCIETY VAINLY TRYING TO
COMPROMISE WITH U. S.

Since their indictment last month by a Federal Grand Jury on charges of antitrust law violation, officials of the American Medical Society have made overtures to the Justice Department to compromise the case in out of court agreement.

So far, the negotiations have got nowhere because of the physicians' insistence that the Medical Society be given special privileges under the law.

As far as is known in the headquarters office of the American Medical Association, no official of this Association has made overtures to the Justice Department to compromise the case; neither have the attorneys for the Association, nor has any official been authorized to make overtures or to conduct such negotiations. A

telegram was sent to Messrs. Pearson and Allen calling attention to the misstatements of fact. No answer was received. Mr. Allen was then called on the telephone. He said: "We received our information from the Department of Justice from a source we consider unimpeachable."—*Jour. A. M. A.*, Jan. 14, 1939.

Correspondence

ARMY APPROVED

Monmouth, Illinois, January 18, 1939.

To the Editor:

I have been directed by the Council to inform the physicians of Illinois through the *ILLINOIS MEDICAL JOURNAL* that the work of the Women's Field Army in their fight against cancer has been given the approval of the Council at a meeting held on Sunday, January 8, 1939. The work of the Field Army in Illinois is directed by the Society's Committee on Cancer and the activities are reported to the Society regularly by this committee.

Each county medical society is urged to select a suitable committee to cooperate with and act in an advisory capacity to the local county captain and her enlisted personnel.

A short report of the Committee on Cancer pertaining to the work of the Women's Field Army appears in this issue of the *ILLINOIS MEDICAL JOURNAL* and it is hoped that each member reads it carefully so they may be able to tell their friends about the fine educational work in cancer this group desires to do in Illinois.

Yours very sincerely,

Harold M. Camp, M. D.

Secretary.

WOMEN'S FIELD ARMY

Chicago, January 14, 1939.

This Army against cancer is an organization that was conceived and organized by the American Society for the Control of Cancer in the fall of 1936. It is a health movement in which the state medical societies play an official part, as the Army does not enter a state until its program has been approved by the State Society. Each state division is directed by a medical executive committee which is largely composed of members of the Cancer Committee of the State Society. In Illinois the State Society's Cancer

Committee directs the work of the Army in Illinois, with the approval of the Council of the State Society.

In this state the Army is organized with a State Commander, Mrs. George Hanly Nippert of Chicago, with vice-commanders in each councillor district, county captains and enlisted personnel. Through an intensive educational campaign conducted by the holding of meetings, forums, newspaper and magazine articles, radio programs and posters, the Army seeks to spread information concerning cancer to the laity, urges periodic physical examinations and thus hopes to bring to the doctor cases of cancer in the early curable stage.

In 1938 forty-three states were participating in the work of the Army and in 1939 it is expected to have divisions in forty-seven states and the District of Columbia. In Illinois sixty-six counties were organized and the program will be carried into many other states in 1939. In April of each year the educational campaign reaches its climax in the enlistment drive. Men and women are invited to enlist in the Army at a fee of one dollar. Thirty cents of each dollar is forwarded to the national headquarters for use in cancer education throughout the country and seventy cents is retained for expenditures in the state under the supervision of the State Executive Committee. No officer of the Army receives any financial remuneration. Much free literature on cancer is distributed, and many meetings for lay education are held.

The councillors of the Illinois Medical Society have co-operated with those engaged in organizing and conducting the Army. Much more good can be accomplished when the entire medical profession lends its support to the work the women are doing, and aids the local community organization by advising with those conducting the campaign in order that their efforts may not be wasted. A favorable word to patients concerning the work of the Army may well be the determining factor in the local success of the Army work. Such support on the part of the profession is earnestly solicited.

Bowman C. Crowell, M. D.,

Chairman, Cancer Committee, Illinois State Medical Society.

THE GOVERNMENT IS IN THE PRACTICE OF MEDICINE STRONG

Long Beach, California,
January 15, 1939.

To the Editor:

You would be amazed if you could read all the news articles appearing in the Pacific Coast papers relative to the attempt to bring about a complete system of tax supported medical practice in California.

You would be surprised to see the hundreds of expectant mothers attending the pre-natal clinic conducted in the Federal building by government doctors and nurses at government expense—these women the wives of naval employees.

The Government is in the practice of medicine strong as you can readily ascertain from newspaper articles appearing frequently.

The past week it has been proposed by the Board of County Supervisors—to remove the present staff of the Los Angeles Hospital and replace it by a paid staff—seriously considered according to the *Los Angeles Times*.

To a Winter observer it seems to me that there are many interested groups besides the doctors who are very much interested in the practice of medicine.

A. M. Harvey, M. D.

PNEUMONIA CONTROL PROGRAM OF THE STATE OF ILLINOIS

Pneumonia ranks third as a cause of death in the State of Illinois. In this State alone during the past five years, it has caused an average of 5,000 deaths annually. Hundreds of these were in young and middle-aged adults upon whose shoulders rested the responsibility for the welfare of the home and the local community. The problem of the loss of the breadwinner for the family is a serious one, and, in many cases, it adds to the already overloaded relief burden of the State. Realizing the seriousness of this problem, and in an effort to reduce the terrific mortality of pneumonia, the State Department of Public Health announces the inauguration of its Pneumonia Control Program.

A well-organized pneumonia control program contains the following provisions:

1. Adequate and easily available facilities for a rapid and accurate bacteriologic diagnosis of

pneumonia, with subsequent provisions for supplying specific serum.

2. Acquainting the physicians with the most modern methods of bacteriologic diagnosis and treatment of pneumonia and also acquainting them with the facilities of the Section of Pneumonia Control of the State Department of Public Health, which has been set up solely for the purpose of aiding them in every way possible.

3. Acquainting the public with these newer methods of treatment, with the fact that there are now life-saving sera for many of the types of pneumonia, and with the necessity of calling the family physician early in order for these sera to be used effectively.

Such a program can succeed only with the help of every physician in the State.

Since September 1938, the State Department of Public Health has been inviting laboratory workers from local diagnostic laboratories in Illinois, public and private, to attend its courses on the bacteriologic diagnosis of pneumonia, which service has been given without tuition or other fees to those in attendance. During the first three months more than 150 people attended this course. As rapidly as possible, the Department is now inspecting local diagnostic laboratories for the purpose of standardizing technique and approving them when found efficient in making bacteriologic diagnosis of pneumonia so that the physicians may be assured of accurate laboratory diagnosis upon which so much of the treatment depends.

Therapeutic antipneumococci horse serum for Types I, II, V, VII, IV and VIII will soon be available in certain strategic areas throughout the State. Because of the lack of sufficient funds, it has been necessary to confine the distribution of serum to these areas for the time being, but as the program expands, other centers will be added. The serum in these centers is to be given free of charge to all physicians in the State of Illinois for the treatment of pneumonia, regardless of the financial status of the patient. The only requirements necessary are:

1. That the bacteriologic diagnostic work for his cases of pneumonia be performed in laboratories which meet the minimum requirements of the State Department of Public Health for typing of pneumonia, and that a treatable type of pneumococcus infection be found.

2. That the duration of the disease has not been longer than 96 hours.

3. That the proper report on the use of the serum be filled in and submitted to the Department.

4. That all unused vials of serum be returned immediately.

Both the economic and therapeutic value of the above are self-evident.

As soon as possible, blood culture outfits are to be dispensed with the serum, as it is extremely important from the standpoints of diagnosis, prognosis, and serum dosage that a blood culture be made on each patient with pneumonia before therapeutic serum is given.

At the present time, serum centers and authorized typing stations are being established at Rockford, Peoria, Chicago, East St. Louis, Springfield, Carbondale and Urbana. Additional authorized typing stations are also being established at certain cities that are within a 50-mile radius of the above. In this way, sputum may be typed locally, and the report of the typing as well as the request for serum may be sent by messenger to the serum centers.

Education of the laity will be promoted as the pneumonia control program advances. It is extremely important that the public be taught the dangers in the neglect of all upper respiratory infections, and the importance of calling the family physician early for the treatment of such infections. Only in this way may the physician have the opportunity to treat pneumonia in its earliest stages, and, in a great many cases, to prevent its onset. In the future, prophylaxis as well as early diagnosis and treatment will undoubtedly play a most important role in the control of this highly fatal disease.

Such a pneumonia control program as outlined above has proved very successful in the states of New York and Massachusetts. The Public Health Departments and the physicians of those states are to be commended upon the work they have done and are still doing in the control of the mortality and morbidity of pneumonia. It is our hope that within the next few years, the Department of Public Health and the physicians of Illinois will be able to feel equally proud of their work in the field of pneumonia control.

A. C. Baxter, M. D.,
Acting Director of Public Health.

WEAKNESS OF SOME OF THE HYGIENIC MARRIAGE LAWS

Chicago, January 5, 1939

To the Editor:

Pre-marital tests for syphilis have become one of the subjects of the hour. Seven states have now passed an hygienic marriage law. These states are Connecticut, Illinois, Michigan, New Hampshire, New Jersey, New York and Wisconsin. The enactment of such a law is now being considered by the legislatures of many other states.

But little has been said about the legal effect of syphilis contracted or discovered after marriage. Therefore, it was with amazement that I read an article entitled Social Health Laws, written by Miss B. Fain Tucker, a Chicago attorney, in a recent issue of the *Kappa Beta Pi Quarterly*. For I learned that syphilis is a cause for divorce in just one state—Kentucky. A healthy spouse may not procure a divorce on that ground in Illinois. In fact our statute specifically provides that it is necessary for the diseased spouse to infect the other before a cause of action for divorce accrues. As Miss Tucker says, our law "supports the proposition that it is better to turn loose on society two infected persons rather than one."

This article also points out the weakness of some of the hygienic marriage laws. All of them limit the period of time that may elapse between the compulsory physical examination and the application for the license, the period ranging from fifteen to forty days. But it is surprising to find that only three of the states place any time limit on the validity of the marriage license. In Illinois and Wisconsin the license becomes void after thirty days, and in New York after sixty days.

We may well question the efficacy of a law that requires a physical examination to be made shortly before the marriage license is issued, and then allows the license to remain valid for a year or so.

In a pamphlet sent me by the author, B. Fain Tucker, a woman attorney in Chicago, this subject is fully covered.

To anyone interested, this pamphlet will be sent on request.

Effie L. Lobdell, M. D.

Strauss Bldg.

U. S. A. vs. A. M. A.

Chicago, Ill., January 25, 1939.

To the Editor:

In its indictment of the American Medical Association, the Government claims that the Association's action in restraining the function of the Harris County, Texas, Medical Society and the Group Health Association of Washington, D. C., is in violation of the anti-trust laws. But the A. M. A. insists that it has a right to say who shall be its members, for only in this way can it maintain the high standard of medical practice necessary for the protection of the health of the American people.

The Government also charges that the Association has used its great powers to force its own economic interests on physicians, hospitals and patients alike.

The A. M. A. represents the policies of all the state societies, which in turn represent the policies of their respective county societies. The county societies are made up of individual practitioners of medicine, coming into contact with the individual patients. Upon their close relationship with and understanding of the patient depends a great percentage of any treatment they might administer. Because of a clear insight into the mind and feelings of his patient the doctor is able to be of assistance in his sickness, real or imaginary, and if the best interest of patient and doctor is to be served, this relationship cannot be disturbed or altered by law.

I have been a member of the American Medical Association for the past thirty-eight years. I have devoted much time to the work of organizations, attending meetings and serving as a member of various committees. These duties have brought me into contact with family physicians and specialists in all branches of medicine, and there has never been an attempt in any organized manner to raise a fee or to fix a minimum or maximum charge to a patient. There has always been organization by lay groups such as charity organizations, who have had enough money to start social service bureaus and supply medical treatment by physicians, without provision for payment for their services. The bureaus take all the credit for this service, which is the greatest element in their success. And lay lodge and insurance groups have advertised to prospective members the advantages of membership

that includes medical services at a cost of a mere two or three dollars a year.

The medical society can maintain its organization only by striving to advance the practice of the science of medicine. Any other objective would have brought defeat many years ago. The dissatisfied members and other irregular practitioners are the ones who are now advocating some sort of government or group insurance, because they expect it to force a fixed income for their own gain, not taking into consideration the consequences to the patient.

We claim that any society or organization is legally able to say who shall be members, as long as it is organized for the advancement of the science of medicine and does not interfere with public policy. Any licensed physician of good moral character may become a member of the medical society. If he becomes a member it is his duty to further the interests of the society and to conform to its rules and ethics.

One objection of the government is that the principles of the society prevent doctors from doing contract practice for lay organizations for a fee that we claim would not be adequate to furnish sufficient medical and hospital care.

The code of ethics of the A. M. A. states that it is unprofessional for a physician to dispose of his services for a fee which makes it impossible for him to give adequate services and to maintain reasonable competition among practitioners. In other words, if lay groups, corporate or otherwise, enter the field of providing medical service, other groups are bound to enter the same field, cutting the price of adequate medical care. There will be solicitation of patients by lay groups, directly or indirectly, irrespective of the quality of care.

The hospitals are owned by the public, the church or by private individuals. They are not the property of the medical profession. But they must depend upon the physicians practicing in them for the highest quality of medical service they can obtain. This part of the hospital's efficiency depends upon the physicians practicing there—the hospital's standing depends upon the grade of practice furnished by the medical staff. How, then, is it possible for a hospital to allow doctors to practice there without some form of management that excludes certain types of practice that they would consider inadequate

or not for the best interest of the patient and the institution? This is not illegal. A hospital must make its own rules governing hospital and medical care.

Doctors give their services gratis to tax supported hospitals. They expect the management of those hospitals not to furnish care to those not entitled to it, because in so doing they work against the interests of the medical profession and deprive them of a proper livelihood. In many instances this is not done because of favor and political influence being brought to bear upon the institution, forcing it to admit patients who are able to pay for their services.

The average income of the general practitioner is less than \$2500.00 a year. The larger individual incomes are the incomes of specialists.

The cost of hospitals and doctors represent less than 60% of money paid for sickness. 40% is paid for medicines not prescribed by physicians, to the different cults, irregular practitioners, faith healers, etc. This 40% cannot be charged against the regular physician and hospital in estimating the cost of medical care.

J. R. Ballinger, M. D.

EDUCATIONAL COMMITTEE

Report for January, 1939

SPEAKERS' BUREAU:

- 72 doctors gave talks before lay organizations for the educational Committee.
- 20 of these talks were on **SOCIALIZED MEDICINE**, and were given before men's clubs, forums, church groups, women's organizations.
- 31 different counties made use of the services of the Speakers' Bureau.

SCIENTIFIC SERVICE:

- 28 programs were arranged for county medical societies as follows:

Scott County, Iowa	Monroe
Will-Grundy	Ogle
Schuyler	Iroquois
Perry	McHenry
Beardstown Hospital	Peoria
Effingham	Jefferson-Hamilton
Lake	Franklin
Bureau	Williamson
Kankakee	Douglas
Jersey-Greene	Litchfield
Rockford	Shelby-Christian

The Scientific Service Committee is now working on a new list of suggested speakers and subjects for county medical society programs. The list will include a number of new plans for clinical conferences, round table discussions, etc.

RADIO:

17 programs were given over Chicago stations, copies of the talks were then furnished downstate societies.

A new series of programs was begun over station WGES. These talks are given in Lithuanian by the Lithuanian members of the Chicago Medical Society, Wednesday mornings at 8:45 o'clock. The original material is prepared by the Educational Committee.

MISCELLANEOUS:

Assisted in program of Summer-Round-Up Chairmen of the Chicago District of the Illinois Congress of Parents and Teachers.

Assisted in program on the Mentally Handicapped Child before the Chicago Woman's Club.

Secured program for the Public Health Chairmen of the Illinois Federation of Women's Clubs, Chicago district.

Held meeting of representatives of special departments of State Department of Public Health to discuss plans for cooperation and coordination.

Represented at meeting of the Advisory Committee of the Maternal and Child Welfare Division.

Represented at meeting of the Committee on the Hall of Health for the Annual Meeting.

Letters sent to all prospective exhibitors in Hall.

Cooperation with Secretary of the Secretaries' Conference.

Assisted with publicity for public meeting sponsored by the Chicago Medical Society.

Furnished material concerning Speakers' Bureau to the Adult Education Council of Chicago.

Mimeographed 500 copies of article on MENTAL HYGIENE for Public Health Chairman of Illinois Federation of Women's Clubs.

Assisted county with plans for a diphtheria immunization campaign.

NEWSPAPER SERVICE:

64 health articles to Chicago newspapers.

341 health articles to Downstate newspapers.

488 editorial articles to papers.

1,880 health articles to home advisers, health chairmen, WPA teachers, schools, Red Cross, etc.

238 articles to libraries.

228 articles to hospitals.

1,003 copies of "The Doctor Looks at Socialized Medicine" from *Nation's Business* sent to above lay list, libraries and hospitals.

Articles written and approved on the following topics:

Have a Heart.

Brain Injuries

Heart Diseases Increasing.

Scarlet Fever.

Deafness and the Child.

PUBLICITY FOR MEDICAL MEETINGS:

40 releases for Bureau County.

56 releases for Franklin County.

28 releases for Jefferson-Hamilton.

46 releases for Peoria County.

67 releases for Chicago Medical Society.

4 releases for North Shore Branch.

AID TO COUNTY MEDICAL SOCIETIES:

110 notices sent for Jefferson-Hamilton County.

99 notices sent for Bureau County.

101 notices sent for Effingham County.

111 notices sent for Franklin County.

125 notices sent for Perry County.

300 notices sent for LaSalle County.

Respectfully submitted,

JEAN McARTHUR, Secretary.

ILLINOIS BUYS 7 IRON LUNGS

At the direction of Governor Henry Horner, the State of Illinois has purchased seven Drinker respirators which are now available for the treatment of any patient in the State who in the judgment of his physician will be benefitted thereby. With appropriate ceremonies in the presence of many dignitaries from official and civil life, these respirators, which are of the latest design, were turned over at Springfield on December 28, 1938, to the managing officers of seven State hospitals. The respirators will be permanently stationed at these hospitals and will be available on short notice, so far as practicable, up on request. These State hospitals are located at: Anna, Alton, Dixon, Elgin, Jacksonville, Kankakee and Peoria.

Physicians who find themselves in need of mechanical respirators for the treatment of patients under their care are invited to feel the utmost freedom in requesting them from the managing officer of the State hospital nearest at hand.

OUR NEW NAME—MISSISSIPPI VALLEY MEDICAL JOURNAL

Fifteen years ago (1924) your editor established THE RADIOLOGICAL REVIEW, the first periodical devoted to the progress of clinical radiology as it interested the physician and surgeon. In 1927 that publication absorbed the CHICAGO MEDICAL RECORDER (Est. 1878), the official publication of the old Tri-State Medical Society (Ill., Mo., and Wisc.), which later became the Inter-State Post Graduate Medical Association of North America. In 1936 the combined journals became the official publication of the Mississippi Valley Medical Society. Most of the pages of the publication during the past few years have been devoted to the publication of the papers read before the Mississippi Valley Medical Society. It seemed fitting and proper, therefore, that the name be changed to indicate its principal function hence the new name—MISSISSIPPI VALLEY MEDICAL JOURNAL (Incorporating the Radiologic Review).

The old journal with a new name will continue its original purpose to be a "general practitioner's" periodical. It will be devoted to the progress of clinical medicine, surgery and radiology as they interest the practicing physician and surgeon. It will contain the papers read before the Mississippi Valley Medical Society—"The Mid-West's Greatest Intensive Post-Graduate Assembly for General Practitioners"—in addition to articles on clinical radiology and allied sciences.

The same editorial board that has cooperated with the publication in the past will be retained.

J. THORNWELL WITHERSPOON, M. D., TO BE NEW EDITOR OF MODERN MEDICINE

The appointment of J. Thornwell Witherspoon, M. D., formerly of Indianapolis and New Orleans, to be editor of *Modern Medicine*, national medical journal published in Minneapolis, is announced by the publishers in the January number, issued this week.

Dr. Witherspoon comes to *Modern Medicine* with a fine record of clinical, literary, research and teaching experience. He has been a liberal contributor to medical literature, having published more than fifty original articles and hundreds of abstracts in leading gynecological and surgical journals. His new medical textbook, now in press, will be published in the early spring by Lea & Febiger under the title, "Clinical Pathological Gynecology."

Dr. Witherspoon was born in New Orleans, La., January 17, 1900. After graduating from Princeton University, he won a Rhodes Scholarship and spent two years in England at Oxford University where he received two degrees in physiology. Returning to America, he entered Johns Hopkins University Medical School, from which he was graduated as Doctor of Medicine. After two years' internship and residency at St. Lukes Hospital, New York City, he entered the practice of medicine in New Orleans. He worked under and in the private office of the late Dr. C. Jeff Miller, past president of the American College of Surgeons. He was appointed instructor and later assistant professor at Tulane University Medical School, New Orleans. Dr. Witherspoon later moved to Indianapolis and was appointed Assistant Professor and subsequently Associate Professor of Gynecology at the Indiana University Medical School.

Dr. Witherspoon is a fellow of the American Medical Association, a member of the Marion County (Indianapolis) and Indiana State Medical Societies. He was formerly a member of the Orleans Parish and Louisiana State Medical Societies. He is licensed to practice medicine in the states of Maryland, Louisiana, and Indiana.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The general oral, clinical and pathological examinations for all candidates, Part II Examinations (Groups A and B), will be conducted by the entire Board, meeting in St. Louis, Missouri, on May 15 and 16, 1939, immediately prior to the annual meeting of the American Medical Association. Notice of time and place of these examinations will be forwarded to all candidates well in advance of the examination dates.

Candidates for reexamination in Part II must request such reexamination by writing the Secretary's Office before April 1, 1939. Candidates who are required to take reexaminations must do so before the expiration of three years from the date of their first examination.

Application for admission to Group A, May 1939, examinations must be on file in the Secretary's Office by March 15, 1939.

Application blanks and booklets of information may be obtained from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, (6) Pennsylvania.

CHICAGO MEDICO-DENTAL-MILITARY TRAINING COURSE

An announcement of particular import to medical, dental and military men and to those interested in these three professions was made today by Major General Stanley H. Ford, commanding the Sixth Corps Area. The second Chicago Medico-Dental-Military Training Course will be held during the period February 26-March 11, 1939.

This joint meeting of the medical and military professions was initiated in Chicago last year and proved so successful that its continuance was decided upon. Facilities for holding such instruction are available in only a very few cities in the United States. Experts claim that no city offers better facilities than does Chicago.

With the full cooperation and assistance of such outstanding medical and dental institutions as: The University of Chicago Medical School; Rush Medical College; University of Illinois College of Medicine; Loyola University Medical School; Chicago College of Dental Surgery, Loyola University; Northwestern University Dental School; and the University of Illinois College of Dentistry; and with the coordination of army (regular and reserve) medical officers, the meetings will offer postgraduate work, clinics and lectures on medico-military subjects, with particular emphasis on the medical-dental phases during the forenoons and on the military phases during the afternoons.

Last year over 250 professional men attended this conference. Indications are that this number will be exceeded this year. Attendance is not restricted to those from the Chicago area but will include many from several states and covering a wide area. Last year individuals from fifteen states were in attendance.

Many Medical Department and other Reserve officers will attend on an inactive status and without expense to the government but will receive inactive status credits in connection with their military schools.

Announcement was made that inquiries from medical, dental and military men concerning any phase of the conference would receive prompt reply if addressed to the Commanding General, Sixth Corps Area, Post Office Building, Chicago.

EXAMINATIONS FOR UNITED STATES NAVY MEDICAL CORPS

The Medical Corps of the United States Navy offers a number of internships and commissions to graduates of Class "A" medical schools who have completed or are about to complete an internship in a civilian hospital. Examinations will begin on May 8th, 1939, and

applications should be on file at least one month prior to that date.

Commissions—Qualified candidates who have completed internships in civilian hospitals and who successfully pass the competitive examination will be commissioned as Assistant Surgeons with the rank of Lieutenant (junior grade) and assigned to the Naval Medical School, Washington, D. C., for a post-graduate course of instruction prior to their assignment to sea or foreign shore duty.

Qualifications—Candidates must be United States citizens between the ages of 21 and 32 years at the time of appointment, and pass a physical and professional examination. The physical requirements comprise the following: Height—66 to 76 inches, inclusive; robust physique and development; weight—proportionate to age and height; hearing—normal; vision—not less than 12/20 each eye unaided by glasses and capable of correction to 20/20; color perception—normal; teeth—not less than 20 vital teeth, of which there must be 4 opposed incisors and 4 opposed molars.

Compensation—Officers of the rank of Lieutenant (junior grade) without dependents receive compensation of \$2,699 per year, while those with dependents receive \$3,158 per year. There are additional cash allowances.

If interested, write at once for further particulars to
Bureau of Medicine and Surgery,
Navy Department, Washington, D. C.

ANOTHER STEP IN THE BETTER CONTROL OF DIABETES

Announcement is made by The Denver Chemical Mfg. Co., 163 Varick St., New York City, that they have succeeded in developing in their laboratories a new, dry, micro-reagent* for making an instantaneous test for sugar in urine and which appears to be entirely practical for adoption as a means of making bedside and routine office tests for glycosuria.

It consists of a compound in powder form. Its use is simple and easy: A small quantity of the powder is deposited on some dry surface and, with a medicine dropper, one drop of urine is allowed to fall onto the powder. The reaction is instantaneous. If sugar is present it will reveal itself in degrees varying from 0.1 per cent to 2 per cent and over. It is quick, accurate and inexpensive.

Hospitals and laboratories have been reporting favorably on its use; and physicians in private practice are adopting it as a routine office measure. This simple test may well prove to be another step forward in the better control of diabetes.

*Called "Galatest".

NEGRO PHYSICIANS TO CO-OPERATE WITH THE A. M. A. ONE HUNDRED PER CENT

At the recent special session of the A. M. A. House of Delegates three members of the national medical association, an organization composed of

some 5,000 negro physicians were accorded the privilege of the floor and allowed to express themselves on the economic problems confronting the negro doctors which are the same as those troubling the members of the American Medical Association. Each of the members of the National association addressed the House in an intelligent and dignified manner which brought forth great applause from the respective delegates. We quote the gentlemen in full.

Roscoe C. Giles, Chicago, addressed the House as follows:

ADDRESS OF DR. ROSCOE C. GILES, CHICAGO

Dr. Hilton S. Read, New Jersey, presented Dr. Roscoe C. Giles, Chicago, who addressed the House as follows:

Mr. Chairman, Members of the House of Delegates of the American Medical Association:

Unfortunately I am not now president of the National Medical Association; I am a past president of the association, but I am here with Dr. Roberts, an ex-president, and Dr. Clarence Payne of Chicago, a member of our Commission on Tuberculosis, by courtesy of the House as the representatives of the National Medical Association. Our organization is an organization which is the mouthpiece for approximately 5,000 colored physicians in America. Many of our men in the North are members of the American Medical Association. We regret that it is not possible for all of our members throughout the entire country to be members of your august body. We are very deeply interested in this subject of medical economics. At our last session, in our convention held at Hampton, Va., August 15-19 of this year, we were visited by some representatives of the federal government with certain plans which were proposed to be introduced at the coming session of Congress which if enacted would mean the initiation of state medicine in America.

It was pointed out to us that there were 40,000,000 people in America who are unable to provide adequate medical service for themselves, that of that 40,000,000 there are 6,500,000 who are members of our race in the rural districts of the South. It was furthermore pointed out to us that we had little or nothing to expect from organized medicine, that for our own self preservation it might be necessary for us to swallow wholeheartedly this plan of the federal government.

Our Executive Committee and our House of Delegates considered the matter very seriously and we arrived at the very definite conclusion that there are no insurmountable fundamental difficulties in the field either of medical economics or of professional relationships between the majority and minority groups which cannot be amicably settled within the ranks of organized medicine. Therefore, in accepting the suggestions that were made to us that we might consult certain departments of the federal government whose forces are now arrayed against organized medicine, we chose to walk in and present ourselves a few days ago before your

distinguished body in session and to there make certain requests and to make certain definite statements, some of which I shall here and now repeat.

The plight of the colored physician in America has been very pitiful. I will not take the time to rehearse all of those things. You men who are teachers in our universities throughout the country know these as well as we do. The thing that has impressed us greatly recently has been the fact that under the Emergency Relief Act so far colored physicians throughout the United States as a whole have not been permitted to take care of colored patients, thus violating a fundamental principle of your great organization, the free choice of physician by patient.

By that same token we have also been prohibited from sharing, as we should like to share, in the provisions for the control of venereal disease throughout this country. We believe that those are problems which can be and will be worked out and we hope will be worked out during your deliberations here.

We are vitally interested, as you are, in all these public health problems. We would like, if permitted, to work hand in hand with you on these matters. It is safe to say, as we said last night, that as no man in America is safe unless the humblest citizen is safe, so is it equally true that no physician in America is safe so far as social security is concerned until the humblest physician has been protected.

We therefore appear before your organization with the request that, if you can see your way clear to do so, you again enunciate the doctrine you have already done of the free choice of the physician by the patient, and, furthermore, to be more specific, that the Negro physicians be permitted anywhere in America to take care of Negro patients if those patients so desire.

We would like to further emphasize that, acting along those principles which were adopted by us in convention, we have decided to go along with you in every way humanly possible, because we know the situation. We have had an opportunity to see socialized medicine in Europe. Dr. Roberts, a distinguished member of this committee, studied it in England, Dr. Payne studied it in France and I have had an opportunity to study it in Vienna for seventeen and a half months, and I am very sure that none of us would like to see the conditions that obtain in Europe at the present time, and which obtained there at the time I was a student in the University of Vienna.

Men who are specialists in that particular city got 50 cents per patient, and the average physician worked for about 10 groschens or about 7 cents a patient. It was a rare thing for them ever to eat meat; they could not afford to buy it.

If we have socialized medicine in America, I am very sure, as you must be sure, that the standards of medical practice will degenerate, that the pay of physicians will not be adequate for them to keep up with their educational facilities and post-graduate study and the patients again will suffer as they have suffered in Europe.

Therefore, in conclusion may I say that we lend to you our support and our sympathies in the struggle that you have against the forces arrayed against you

and promise you that so far as humanly possible we will give you our undivided strength.

ADDRESS OF DR. CARL G. ROBERTS, CHICAGO

Mr. Speaker and Officers and Members of the House of Delegates:

As an additional member of the committee representing the National Medical Association, I wish to supplement and to further emphasize the remarks that have been made by our chairman, Dr. Giles. We want to bring to you the good will of the National Medical Association and to assure you that this is a momentous event when we show to the outside world through our reception here by your gracious and distinguished body that whatever difference in point of view may exist internally in the ranks of medicine, to those forces that are arrayed against us that are seeking to disintegrate organized medicine we present a united front of opposition, that there are no problems, as has just been said, which are so insurmountable or so difficult that they cannot be solved amicably within the ranks of organized medicine.

As I heard Dr. Snyder present his plan here this morning, I wondered if he was thinking, as I was thinking, in amazement at the plan that was presented at the Planning Committee of the Republican Party held recently in Chicago, where we were present not as partisan politicians but as invited guests to represent our several and component societies; we heard presented there a deal that surpassed the New Deal, a proposal to socialize medicine completely from top to bottom. I wonder whether those of you who were present listened with the same amazement with which the members of the National Medical Association listened. I assure you that we know definitely, as we told them on that particular occasion, that we know what we want concretely and what we don't want, and one thing that we do not want is any socialization of medicine, and I want to assure you gentlemen in whose hands the fate and destiny of the American Medical Association lies, that we are quite willing to subscribe to whatever you decide upon on this occasion, that we believe, as you do, that the fate of medicine in America, that the fate of the health problem so far as it affects the laity, is best put into the hands of those who are trained especially to take care of them, in other words in the hands of the American doctor and the American dentist, and we believe with confidence in your sense of fair play and in your sense of justice and in your ability and your wisdom to see to it that those handicaps which have been mentioned to you, under which we labor, will be adjusted and removed, because we feel that you will agree with us that the health of one-tenth of this population, who are Negroes, in the final analysis must lie largely in the hands of the Negro doctor, and as long as that minority which has the highest rates of morbidity and mortality in these preventable diseases is a drag on the health situation of America, so long must we be prepared to meet it.

Again, in conclusion, we want to thank you on behalf of our association, which appreciates more than you can know this gesture of good will. I have just received this afternoon a letter from our president in which

he has answered a copy of an attack that appeared as an editorial in a newspaper last week on both the American Medical Association and the National Medical Association, and that letter of his will be published in that paper this week, an answer to those forces that are inviting us to put our fate in the hands of propagandists who use a system so often used when they want to divide a house against itself, by laying the matter in the hands of outsiders. We propose to rely on the members of this Association. There is no section and no division line in friendship or medical principles regardless of race involved, and we propose to march forward with you in all that is best for American medicine if you will permit us to do so.

ADDRESS OF DR. CLARENCE H. PAYNE, CHICAGO

Mr. Chairman and Members of the House of Delegates:

The previous speakers have laid before you most of the things that have been close to our hearts, but I may add this: that it was the consensus of opinion of the men from Texas and the men from all sections of this country that you stimulate and advance the health and the protection of the Negro patient in the Southland as well as in the Northland by affording us the courtesy and the dignity of respect that you have today. We wish to add that in their evolvement of this question they felt that it brought itself down in medical economics to the recognition of the patient and physician, that if we considered all our problems from this angle most of them would be solved, because wherever we have a separation of that ideal we have always had failure. We have felt that we needed to inform the government that we regarded Americans as divided, for practical purposes, into three classes: one class able to pay for any amount of hospital and medical care, and they certainly should not be interfered with by anybody; the middle group of course needing some supplementary aid, probably, but that aid has always been able to be worked out by American initiative, and we felt that the hospitalization plan as worked out here in Chicago, if it were made more comprehensive, could extend to all employed persons in the United States, operating by private enterprise and supervised by medical boards so that any mistakes in its operation could be corrected, and that would afford them a solution and help them to meet their problems; in regard to the indigent we felt that here too the patient and physician relationship should exist, and that there should of course, if necessary, be federal subsidy but that in the subsidy of these patients it should be also supervised by medical commissions, whether they be state or whether they be under the head of your American Medical Association. In that way, rather than being exploited, the patients and the physicians of this country would reach an amicable settlement of all their difficulties.

Those are the general principles on which we felt that our case would rest and that we would wait on you for guidance in the working out of those details which are necessary to arrive at a proper solution.

I thank you for this privilege.

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE

Postgraduate Course in Syphilis

Given by the Department of Dermatology in Co-operation with the various Departments in the University of Illinois College of Medicine in the Research and Educational Hospital, 1819 West Polk Street, offered under a grant from the Federal Government with the approval of the Illinois State Department of Public Health.

Eight-weeks course: Tuesday and Thursday from 2 to 4 p. m. First period starts February 27, 1939.

The course consisting of lectures, laboratory demonstrations and the presentation of hospital and dispensary clinical material is designed to offer to the practitioner a review of the subject and a discussion of recent developments in this field.

The course will be repeated four times a year. Only licensed physicians practicing in the State of Illinois will be accepted. The number of registrants for any one period will be limited to 20. Those registering will be accepted in the order of application.

There will be a registration fee of \$10.00. Applications together with a check covering the registration fee, made payable to the University of Illinois, should be sent to the Examiner and Recorder at 1853 West Polk Street, Chicago, Illinois.

NORTHWEST REGIONAL CONFERENCE

Palmer House, Chicago

Sunday, February 12, 1939

Carl F. Vohs, M. D., St. Louis, President—Chairman of Committee on Medical Economics, Missouri State Medical Association.

L. Fernald Foster, M. D., Bay City, Michigan, Secretary—Secretary, Michigan State Medical Society.

PROGRAM

8:30 a. m.—Breakfast (Room Number 18).

9:30 a. m.—Registration (Foyer, Red Lacquer Room).

10:00 a. m.—Morning Session (Red Lacquer Room).

A State-Wide Hospitalization Plan for the Low Income Group—Major G. Seelig, M. D., St. Louis, Missouri State Medical Association.

Pennsylvania's Public Assistance Program for the Medically Indigent—Walter F. Donaldson, M. D., Pittsburgh, Secretary, Medical Society of the State of Pennsylvania.

Middletown Modernizes Medicine (Lantern Slides)—Donald A. Covalt, M. D., Muncie, Indiana, Secretary, Delaware-Blackford County Medical Society; J. C. Silvers, M. D., President, and L. G. Montgomery, M. D., Muncie.

The Physician's Role in a Public Health Program—Theodore R. Meyer, M. D., Clayton, Missouri, Health Commissioner, St. Louis County.

1:00 p. m.—Luncheon.

Missouri State Medical Association will be host to the Representatives from State Medical Associations.

Report of the Year—Carl F. Vohs, M. D., St. Louis, President, Northwest Regional Conference.

Election of Officers for 1940.

Selection of meeting place and time of meeting.

Introduction of guests.

2:00 p. m.—Afternoon Session.

The National Health Conference—Henry A. Luce, M. D., Detroit, President, Michigan State Medical Society.

Discussion to Include the National Health Program Submitted to Congress.

Survey on the Need and Supply of Medical and Hospital Care—William F. Braasch, M. D., Rochester, Minnesota, Chairman, Committee on Supply of Medical Care, American Medical Association.

Supplementary Arrangements for Medical Care—R. G. Leland, M. D., Chicago, Director, Bureau of Medical Economics, American Medical Association. Kansas Can Control Cultists—Mr. Clarence G. Munns, Topeka, Kansas, Executive Secretary, Kansas Medical Society.

General Discussion of All Presentations.

A NEW GARMENT

"Eliza," said a friend of the family to the old colored washerwoman, "have you seen Miss Edith's fiance?"

Eliza pondered for a moment, then bent over the laundry tubs once more. "No, ma'am," she said, "it ain't been in the wash yet."

PRECOCIOUS SEXUAL DEVELOPMENT FROM AN ANTERIOR PITUITARY-LIKE PRINCIPLE

In the course of treating thirty-three patients for undescended testis with the anterior pituitary-like principle, Willard O. Thompson and Norris J. Heckel, Chicago (*Journal A. M. A.*, May 28, 1938), observed that genital growth was produced in eighteen and that in fourteen it was marked. In two of them, aged 7 and 9 years, a condition resembling premature puberty resulted. The penis became as large as that of an adult. There was an increase in the size of the scrotum and prostate, a growth of pubic hair, a marked increase in frequency of erections, a change in the pitch of the voice, and in one a growth of hair on the sides of the face. Similar changes were produced in a 4-year-old boy out of a total of twelve patients with hypogenitalism, and less marked growth in eight others. The boy showing changes simulating premature puberty was of normal body contour but had an atrophic left testis. All boys showing genital growth became more masculine. It should be pointed out that in some of the patients with undescended testes and hypogenitalism who failed to show any growth, the dose may have been inadequate, there being several examples in the series of failure of growth with a small dose and a well marked growth with a larger dose. In contrast to the marked growth of other parts of the genitalia, the testes showed very little change in size. Descent was produced in only 23 per cent. of the total number of

undescended testes, showing that genital growth may occur without descent of the testis. The treatment for undescended testes with the anterior pituitary-like principle should be stopped before genital growth becomes marked. If this rule is followed, it would appear that in the present state of knowledge its routine use is justifiable and desirable.

ALCOHOL IN RELATION TO TRAFFIC ACCIDENTS

"Richard L. Holcomb, Evanston, Ill. (*Journal A. M. A.*, Sept. 17, 1938), reports the results of a study of the drinking of drivers involved in personal injury accidents and of the drinking of drivers in the general population. The second study served as a control of the first, allowing conclusions to be drawn as to the part alcohol plays in accidents. A total of 270 persons were tested in the first study. Drivers involved in personal injury accidents who accompanied the persons injured to a hospital or drivers who themselves were injured were tested by urinalysis for alcohol. A total of 1,750 persons were tested in the second study. Drivers were chosen at random from an area comparable to that of the first study. A complete testing laboratory, with the Harger "drunkometer," was set up in a trailer, allowing breath tests for alcohol to be made immediately. 1. The highest percentage of drinking drivers occurs in the early morning hours and over the week-end. 2. The largest number of drinking drivers occurs in the early evening and over the week-end. 3. The peak age for drinking drivers is from 25 to 30. 4. Women drink and drive as much as men when the number of women driving at various hours of the day is considered. 5. The percentage of drinking drivers in the general population varies as does the percentage of drinking drivers in the personal injury accident group but falls considerably lower at all times. 6. The percentage or number of drivers involved in personal injury accidents varies as does the percentage or number of drinking drivers. 7. As the blood alcohol content increases, the number of drivers appearing in the personal injury accident group increases out of all proportion over that in the general driving population. 8. As alcohol increases, accidents increase and at a rate somewhat proportionate to the increase in alcohol. 9. Equal percentages of drinking drivers are found in the accident group and in the general population group at a point near 0.5 part of alcohol per thousand parts of blood, indicating that alcohol in that amount is not necessarily a significant cause of accidents. 10. The data gathered in this study confirms a self-evident fact, that alcohol is a major cause of automobile accidents."

SCHOOL DAYS

The octogenarian, Mr. Jones, during an operation for the rejuvenation of youth, became very impatient.

"Don't be so restless," growled the nurse.

The poor man went on moaning and sobbing.

"Don't cry, the pain will soon vanish."

"I'm not crying because of pain," explained the old man, "I'm afraid I'll be late for school."

Original Articles

FINER USES OF THE CROSS-CYLINDER IN REFRACTION

PHILIP A. HALPER, M. D., F. A. C. S.

Associate Ophthalmology, University of Illinois,
College of Medicine

CHICAGO

INTRODUCTION

In the finer interpretation of the ametropias, one must learn to visualize variations in physiologic optics in much the same manner as one learns clinical pathology in order to properly evaluate signs and symptoms. What goes on in the uncorrected ametropic eye and what the lenses do which are placed before the eye to make it emmetropic are phases of refraction which all should understand in crystal clearness. The mastery of the crossed cylinder serves to give one a visualization of the whole optical mechanism. This special combination lens eventually brings to the refractionist an enthusiasm to such a high pitch that he ceases to work with inert glass in his test case. He becomes conscious of the effects which each lens produces on the deviation of rays on the receptive retina. The refractive mechanism of the eye is vital and alive. Why shouldn't the correction take on a like character? The examiner imparts a living function to the lenses when he properly corrects an ametropia and relieves a patient of troublesome symptoms. Does not a thorough refraction really become an exhaustive examination of the oculist?

One can unhesitatingly state that the most valuable instrument in refraction aside from the retinoscope is the cross-cylinder. This takes on an added value when manifest refractions must be done. Once the technic as to the several uses of the instrument is mastered, it will never fail one. It leads the patient very directly over the uncertainties of his answers and it guides the examiner with unerring and infallible accuracy in his own doubtful moments. Let all the accessories of refraction be taken away except the cross-cylinder, and with it alone, one will do superior work. He who has really learned to use it, has never laid it down in disappoint-

ment; and one has yet to hear an adverse criticism as to its claims to merit.

Strange that such a valuable instrument described 90 years ago by Stokes and 50 years ago by Jackson should be understood by such few ophthalmologists. About five per cent. is a rather fair figure as to the number of ophthalmologists who use it, in spite of the popularization of the instrument by both Jackson and Crisp in the past 15 years. *The difficulty in large measure must be the inability to learn the use of the instrument through the literature*, and this presentation, entirely too short, is intended to stimulate the further perusal of the literature and to point out, in the large models of the eye and cross-cylinder, the various maneuvers and their interpretations.

A. EFFECTS OF THE CROSS-CYLINDER ON THE AMETROPIAS. To facilitate the understanding of the cross-cylinder, one needs to know that it acts on both principal meridians in the opposite manner, at the same time. It is also necessary to constantly keep before the mind's eye the physiologic fact that a *cylinder acts on the meridian at right angles to its axis*. A plus or minus cylinder in the vertical axis acts on the horizontal meridian and a plus or minus cylinder in the horizontal axis acts on the vertical meridian. By holding a cross-cylinder *position one* with the rule before an eye (Fig. 1b) the plus element in the vertical direction acts on the horizontal meridian by converging the rays, while the minus element in the horizontal direction acts on the vertical meridian by diverging the rays. In *position two* (Fig. 1c) the plus element in the horizontal direction, acts on the vertical meridian by converging the rays while the minus element in the vertical direction acts on the horizontal meridian by diverging the rays. In an emmetropic eye (Fig. 1a) the *first position* of the crossed cylinder will produce an identical optical change as the *second position* since both principal meridians are identical and the plus and the minus cylinders in the cross-cylinder are of equal strength.

It becomes understandable now that in any type of Ametropia with astigmatism there will be a difference in the visual acuity between position one and position two when the instrument is held before the eye. This should serve as the key

to the interpretation on the uses of the cross-cylinder.

1. Simple Hyperopic Astigmatism:

In a simple hyperopic astigmatic eye with the rule the rays from the greater horizontal meridian with its lesser than normal curvature will come to a focus behind the retina, while those rays from the normal vertical meridian will come to a focus on the retina. In *position one* of the cross-cylinder the horizontal rays are converged on to the retina, while the vertical rays are diverged slightly behind. In *position two* of the cross-cylinder the horizontal rays are diverged farther behind the retina while the vertical rays are converged in front. Here the cross-cylinder shows the presence of astigmatism. In *position one* the vision is better than in *position two*; and the position of the instrument also points the direction and axis of the cylinder to be prescribed.

1. Simple Myopic Astigmatism:

In a simple myopic astigmatic eye with the rule the rays from the lesser vertical meridian with its greater than normal curvature will come to a focus in front of the retina, while those rays from the normal horizontal meridian will come to a focus on the retina. In *position one* of the cross-cylinder the horizontal rays are converged in front of the retina while the vertical rays are diverged on to the retina. In *position two* of the cross-cylinder the horizontal rays are diverged farther behind the retina while the vertical rays are converged more in front of

the retina. Here again the cross-cylinder shows the presence of astigmatism. *Position one* of the cross-cylinder is better than *position two*.

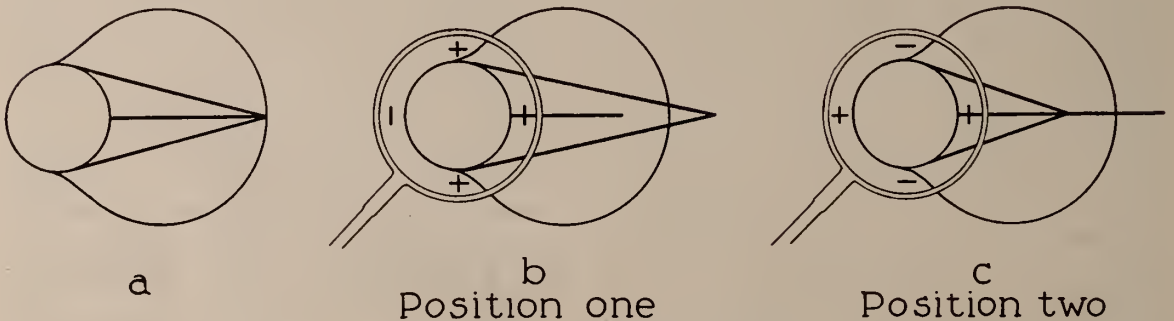
3. Compound Hyperopic Astigmatism:

In a compound hyperopic astigmatic eye with the rule (a hyperopic eye with the horizontal meridian greater than normal) the rays from both principal meridians will come to a focus behind the retina, while those rays from the greater horizontal meridian are focused farther behind. In *position one* of the cross-cylinder the horizontal rays are converged closer to the retina while the rays from the vertical meridian are diverged farther behind the retina. In *position two* of the cross-cylinder the horizontal rays are diverged farther behind the retina, while the vertical rays are converged closer to the retina. *Position one* of the cross-cylinder is better than *position two* because it partially corrects the refractive error.

4. Compound Myopic Astigmatism:

In a compound myopic astigmatic eye with the rule (a myopic eye with the vertical meridian shorter than normal) the rays from both principal meridians will come to a focus in front of the retina, while those rays from the shorter vertical meridian are focused farther in front. In *position one* of the cross-cylinder the horizontal rays are converged farther in front of the retina while the vertical rays are diverged closer to the retina. In *position two* of the cross-cylinder the horizontal rays are diverged closer to the retina, while the vertical rays are

Emmetropic Eye



Position one same as position two.
Horizontal and vertical meridians identical.

Figure 1.

converged farther forward in front of the retina. *Position one* of the cross-cylinder is better than *position two* because it partially corrects the refractive error.

5. Mixed Astigmatism:

In a mixed astigmatic eye with the rule (*normal length eye with horizontal meridian longer than normal, and vertical meridian shorter than normal*) the rays from the longer than normal horizontal meridian will come to focus behind the retina, while those rays from the shorter than normal vertical meridian will come to a focus in front of the retina. In *position one* of the cross-cylinder the horizontal rays are converged on to the retina, while the vertical rays are diverged on to the retina. In *position two* of the cross-cylinder the horizontal rays are diverged farther behind the retina, while the vertical rays are converged farther in front of the retina. *Position one* of the cross-cylinder corrects the refractive error while *position two* accentuates the error.

B. CLINICAL APPLICATIONS OF THE CROSS-CYLINDER. When one uses the cross-cylinder in all it possibilities, it will do the following:

1. (a) Determine the presence of an astigmatic error however small;

(b) Locate the axis accurately of the cylinder, however small:

2. Build up the refraction; (this it does by influencing the sphere and cylinder at the same time.)

3. Serve as a final check on the accuracy of the axis of a cylinder;

4. Aid in presbyopia to determine the accuracy of the addition for the specific distance of the patient's needed near point.

For practical purposes the first two uses of the cross-cylinder give it its greatest value, despite the fact that the instrument is generally used as enumerated in 3, namely, as a check on the axis of the cylinder. In playing with the cross-cylinder there develops in one a game-like satisfaction in searching for and locating small cylinders which in average refractions are entirely missed. Besides uncovering these small errors one usually finds them "off axis" for, with the cross-cylinder, one invariably can swing the axis to either side of the 90° vertical, or 180° horizontal. In other words, the proper use of

Astigmatism in Quadrant

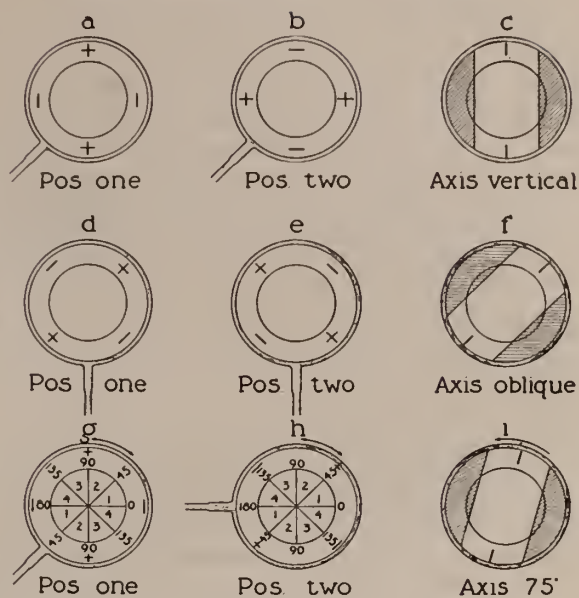


Figure 2.

the cross-cylinder usually reveals the astigmatic error to be "off axis." With what uncertainty does one regard a cylinder which is "off axis" and especially a small cylinder "against the rule?" In manifest refractions (and many must be done without mydriasis or cycloplegia) the cross-cylinder will be one's greatest guide. He will learn to prescribe the cylinders positively when picked up with the instrument either "off axis" or "against the rule" and his work will take on a superior quality.

1. Determination of the Presence and Axis of a Small Cylinder:

An eye which has had its hyperopia or myopia corrected will give a different answer in the two positions of the cross-cylinder as described above when small astigmatic errors are present. *Rule: When working with a hyperopic eye think of the cross-cylinder in terms of its plus cylinder element; the other part is only minus sphere. Conversely, when working with a myopic eye think of the cross-cylinder in terms of its minus cylinder element; the other part is only plus sphere.* In locating the axis with the cross-cylinder three double maneuvers are necessary. Firstly, the cylinder is located in the vertical or horizontal. Secondly, the cylinder is located in an oblique which gives one the quadrant in which the cylinder is contained. Thirdly, the cylinder is favored toward one side of the quad-

rant. When dealing with a quarter diopter of astigmatism, one prescribes the cylinder 15 degrees to the side of the quadrant which is favored in the third double maneuver. For example (Fig. 2) in simple hyperopic astigmatism with the rule, in the first double maneuver, *position one* and *position two*, the patient will favor *position one*, which means there is a cylinder present in the vertical axis (Fig. 2c). Since the vertical axis is on either side of the 90°—namely, from 45° to 135°, the second double maneuver now will locate the proper oblique (Fig. 2f) and quadrant. In this second double maneuver should *position one* at axis 45° be better than *position two* at 135°, then one locates the cylinder immediately in quadrant 2 (Fig. 2g-h). The cross-cylinder is then placed in the trial frame so that the plus element is “rocked” between the 90° and the 45° (Fig. 2g-h). Should the patient favor the 90°, then a cylinder is given at 75° (Fig. 2i), for the patient has chosen the cylinder toward the vertical rather than toward the oblique. In half diopter errors the findings are obtained with the 0.50 cross-cylinder in the same manner but the axis of the cylinder is ultimately chosen to a more precise axis, usually to within 5°. The axis of a larger cylinder should be accurately accepted by the patient in the usual manner of “rocking” cylinders in the trial frame.

2. The Building of The Refraction.

In building up the refraction by influencing both meridians at the same time, one adds to the cylinder and deducts from the sphere or vice versa as the case may be.

1. Compound Hyperopic Astigmatism.

(a) Plus of the cross-cylinder against (held parallel with) the plus cylinder in the trial frame calls for more plus cylinder and less plus sphere. (*Position one.*)

(b) Minus of the cross-cylinder against (held parallel with) the plus cylinder in the trial frame calls for less plus cylinder and more plus sphere. (*Position two.*)

2. Compound Myopic Astigmatism.

(a) Minus of cross-cylinder against (held parallel with) minus cylinder in trial frame calls for more minus cylinder and less minus sphere. (*Position one.*)

(b) Plus of cross-cylinder against (held parallel with) minus cylinder in trial frame calls

for less minus cylinder and more minus sphere. (*Position two.*)

3. Mixed Astigmatism (minus sphere with plus cylinder).

(a) Plus of cross-cylinder against (held parallel with) plus cylinder in trial frame calls for more plus cylinder and more minus sphere. (*Position one.*)

(b) Minus of cross-cylinder against (held parallel with) plus cylinder in trial frame calls for less plus cylinder and less minus sphere. (*Position two.*)

3. Final Check On the Axis of the Cylinder.

This maneuver with the cross-cylinder is very useful in patients with less than normal vision who have moderate astigmatic errors ($\frac{1}{4}$ to 1 diopter) which they cannot place at the exact axis. The cross-cylinder is held over the correcting lenses with the handle parallel to the axis of the cylinder in the trial frame, and the patient is asked to make a choice when the cross-cylinder is flipped from *position one* to *position two*. When the astigmatism is at the accurate axis there is no improvement noted by the patient in either position of the cross-cylinder, but if the patient is able to make a choice the axis is inaccurate. For example, the plus cylinder happens to be at axis 75°: by holding the cross-cylinder with the plus at 120° and the minus at 30° as the *first position* the patient says it is worse; by flipping to the *second position* so that the plus of the cross-cylinder is at 30° and the minus at 120°, the patient says it is better; he is asking for the axis to be moved toward the 60° side. This maneuver is repeated until no further choice can be made between *positions one and two*. As can be seen, in hyperopic astigmatism the plus cylinder component of the cross-cylinder is taken into consideration; in myopic astigmatism the minus cylinder component is kept in mind.

4. Use in Presbyopia.

A card made up of a series of horizontal and vertical crossed lines, is held before the eyes at the desired reading distance. The proposed reading addition is placed in the trial frame. A 0.50 cross-cylinder is now placed before the corrected eye against the rule. If the vertical and horizontal lines appear alike in intensity, the correcting lenses are of proper strength. Should the horizontal lines appear clearest the patient

wants more plus; should the vertical lines be clearest, the patient is overcorrected and the addition should be reduced.

307 North Michigan.

DISCUSSION

Dr. Thomas D. Allen, Chicago: I think we ought to congratulate Dr. Halper for this magnificent presentation. I read over his paper last week and could not find anything to discuss. In talking with him on the way down he put me in mind of several points. One is, we must bear in mind that from 95 to 98% of patients have astigmatism: the question is, how much and at what axis? Not that we will fit everybody with an astigmatic correction but we want to find out what it is. Therefore we assume that everyone has it and only after an exhaustive study do we admit that a patient has not an astigmatism. We can all easily overcome small errors of hyperopia or myopia, but the small error of astigmatism is a *bête noire*; also the larger error that is not accurately axised.

We have used the cross-cylinder for many years in our office; I suppose we use it every day many times. Those to whom the cross-cylinder is complicated can do what I often do, use the simple cylinder. The same principle holds true. One of the very fine advantages of the cross-cylinder, I think, is that we can find the off axis very accurately. For instance, most of us are inclined to give 90, if we find it anywhere within ten degrees of 90. I think after using the cross-cylinder you will give 70, 85, 82 even. It is so often off axis a little bit one way or the other, if we can find the exact axis we are apt to make our patients a little more comfortable. The simple cylinder is of use if you fog; and you can "fog out" with minus cylinder and follow this technic that has been so ably presented here before you.

Dr. Jack Cowen, Chicago: Many excellent articles have been written on the use of the cross-cylinder, and for all their illustrations they are difficult to translate into practical usefulness. Since the action of this instrument is most easily taught by direct instruction and personal demonstration and, since its description on the printed page is at best forbidding, we have all been fortunate in hearing Dr. Halper's lucid and sympathetic treatment of the subject.

I have used the cross-cylinder consistently since my introduction to it four years ago and find it an indispensable part of my refracting equipment. The cross-cylinder offers a sudden and simultaneous choice between two different positions on either side of the axis of a cylinder in question. It brings out small astigmatic errors indeterminate or questionable with the retinoscope. It indicates clearly the presence of too much or of insufficient amounts of cylinder.

In performing a manifest refraction, I find it best to begin first with spheres, then using the cross-cylinder to determine the approximate strength and axis position according to the three maneuvers cited by Dr. Halper. I arbitrarily use the "plus-fifty:minus-fifty" cross-cylinder for visions less than 20/30, and the "plus-twenty-five:minus-twenty-five" for visions better

than 20/30. A second adjustment of the sphere is made and the cylinder corrected again. During adjustments of the axis, the equivalent power of the entire equation is always balanced, and attempts are made to increase the hyperopic, or decrease the myopic element. This is never pushed to the point where blurring makes choices with the cross-cylinder impossible.

The cross-cylinder is most accurate with accommodation in abeyance. The check in cylinder strength occurs to within a quarter diopter in most cases. The axes are not found on the vertical meridian as frequently as the retinoscopic shadows would lead one to believe. The cross-cylinder usually shows slight obliquity to the axes. Recheck of the retinoscopic findings after correction with the cross-cylinder is always most enlightening.

At post-cycloplegic examination, I prefer to recheck the axes and cylinder strengths with the cross-cylinder although many oculists take their findings directly from their trial case results. Stine, in his study on variations of the refraction in the extra-visual pupillary zone, cites many cases where the refraction differs in various parts of the pupillary area. The recheck, then, is a safeguard against the patient choosing a new visual axis through the smaller pupils. Sometimes reduction of the spherical component of the full correction must be made about a quarter diopter to clarify the type, so that a choice may be made during the cross-cylinder maneuver. If the difference at the "flip" is not clear, the patient will often swing wide of the correct axis and make a big circuit before returning to the proper position.

I find it wise to ask the patient "Which of these two faces is the better?" rather than "Is it more clear now?" It is often good to take the wind out of the patient's sails by reminding him that you know he probably sees better without the cross-cylinder lens in place than with it. It is often gratifying to the patient to have him close his eyes during changes of the lenses. His answers after the rest are often accurate and more quickly given.

In the refraction of aphakic patients with cross-cylinders, it is wise to start with a "plus-seventy-five:minus-seventy-five" in conjunction with a high sphere commensurate with the patient's preoperative refraction. When a large cylinder is expected, as shown perhaps by a Javal keratometer, it is often wise to start with a +3 cylinder in the horizontal meridian, carrying on from here with the cross-cylinder.

In closing, I should like to call attention to a rule enunciated by Dr. Halper: when dealing with a plus cylinder, think of the cross-cylinder also as a plus cylinder with which a minus sphere has been incorporated; conversely, with a minus cylinder in the trial frame, think of the cross-cylinder as a minus cylinder combined with a plus sphere. I visualize the white dots as the axis of my plus cylinder and the red dot as representing the action of that cylinder. The reverse is true when thinking of the cross-cylinder in terms of its minus elements. As Dr. Halper says, intimacy with the cross-cylinder makes it a living part of the refraction.

Dr. O. B. Nugent, Chicago: I would like to add one thing to what has been said. It has been very interesting to hear this discussion and I want to assure anybody who has not used the cross-cylinder that it is not as complicated as it seems. One thing I have noted is the readiness with which the patient will tell us which is the better side for the cross-cylinder regardless of how slow he is in answering other things. One thing I might add to its use. In using it the originators have advised that you use the handle over the axis of the cylinder you are testing. I have a mark on my cross-cylinder so that this can be more accurately laid over the cylinder that is being tested in the trial case. I find this a great advantage.

Dr. Philip Halper, Chicago (closing): I took more time than was allotted to me but the subject matter would have been incomplete had I tried to cut out certain parts of it. If you learn to interpret the cross-cylinder thoroughly in one way and use the instrument long enough, all other interpretations will gradually come to light. What primarily interests me is uncovering the small astigmatic error with its proper axis and building the refraction. One reserves the further uses of the cross-cylinder for occasions when they arise.

I want to thank the discussors for bringing out additional material which time did not permit me to stress.

CARCINOMA IN CLINICALLY BENIGN GASTRIC ULCER

MAX MASS, M. D.,
and

FREDERICK STEIGMANN, M. D.,

CHICAGO

That a certain percentage of large gastric ulcers undergo malignant degeneration is unanimously accepted. The controversy among clinicians rests only on the number of such cases. Thus, we find the percentage of malignant changes in gastric ulcers given as anywhere from 68% (MacCarty); 30% (Eiselsberg); 26% (Finsterer); 20% (Katsch); 10-20% (Scott); and 5-10% (Stewart, Hurst, etc.).

There is a further unanimity of opinion that it is often very difficult to decide clinically whether a given large gastric ulcer is benign or malignant and, therefore, various criteria have been suggested by different men as diagnostic aids in such cases. Thus the size, shape, location and changes in the niche on x-ray examination (Kirklin, etc.), the appearance of the lesion on gastroscopy (Benedict), the presence

of free acid, the presence or absence of blood in the stools, the clinical response to treatment, and the appearance of the lesion on laparotomy, have all been given as valuable points in the differentiation of the benign from the malignant gastric ulcers.

It is not within the scope of this brief report to controvert either the percentages of malignant degeneration of large gastric ulcers, or the value of the various given diagnostic criteria. Here we only wish to stress the fact that in certain cases of large gastric ulcer, there is no definite criterion either by means of the history, physical examination, laboratory findings, x-ray examination, gastroscopy, clinical progress, or even surgery by which one could with certainty tell whether the lesion is benign or malignant; and that only the microscopic picture is the ultimate diagnostic factor. A case which illustrates vividly the above assertion, and which fulfills completely the requirements for a diagnosis of benign gastric ulcer, came recently under our observation and forms the basis of this communication.

CASE REPORT

C. B., a thirty-eight year old white male, entered the medical wards of the Cook County Hospital, for the first time, on February 3, 1938. On admission he gave a history of periodic attacks of epigastric distress for about 12 years. These attacks would occur usually in the spring and fall and were of variable duration in length. The distress varied from a cramplike to burning pain in the epigastrium, occurred two to three hours after eating, was aggravated by heavy, fried, spicy and sour foods, and was promptly relieved by a dietary and alkaline regimen. Nausea and vomiting were associated at times. The bowels were usually constipated during these attacks. He was under the management of several doctors during the past 12 years and had received ten "shots" for his ulcer about one year ago with some improvement of symptoms. In November, 1937, he developed an attack of hematemesis and melena. These symptoms, too, subsided on his usual regimen. However, after this episode he never recovered as fully as previously, but continued to have a more or less constant epigastric distress which now was not relieved promptly by food or alkali. Two weeks before entrance he noted melena again. There was no appreciable loss of weight. The failure to recover as before and the presence of tarry stools led to his entrance to the hospital.

On examination, the patient appeared well developed, moderately well nourished, and not acutely ill. His temperature, pulse and respiration were within normal limits. The blood pressure was 130 systolic; 82 diastolic. The only other findings were tenderness and moderate rigidity over the entire epigastric region.

From the Department of Roentgenology, Dr. M. J. Hubeny, Director; and the Department of Internal Medicine, Cook County Hospital, Chicago.

The laboratory work-up revealed a negative urine, a mild secondary anemia, and occult blood in the stools. Fractional Ewald studies done on five successive days showed a fasting free acid from 28° - 54° , and a free acid curve well above the average "normal" acidity.

Roentgenologic studies on the stomach, February 7th, revealed a large, smooth niche on the lesser curvature of the stomach, just beyond the angulus. There was also a crescentric defect at the apex of the duodenal bulb.

Because of the above history, clinical and laboratory findings, a diagnosis of benign gastric ulcer was made and the patient was put on a strict Sippy regimen. The patient soon became symptomless. The stools became negative for occult blood. Gastroscoy performed by Dr. Schindler demonstrated a large ulcer crater on the lesser curvature with sharp edges. This affirmed the impression of a benign ulcer. Hence, ten days after admission, the patient was discharged to the care of the Gastrointestinal Clinic.

diminution in the size of the niche (Fig. 2.). The patient was then advised to reenter the hospital.

He was readmitted March 21st and at this time he complained of a rather constant aching pain in the right upper quadrant which radiated to the back. Examination now revealed a temperature of 101° F., sunken cheeks, icteric tinge to sclerae and skin, liver palpable two fingers below costal margin, and a definite orange size mass protruding from under the right costal margin close to the xiphoid process. This mass appeared firm, tender and moved with the liver on respiration. Fluoroscopic examination showed a relatively fixed and elevated right dome of the diaphragm. The Graham-Cole test did not visualize the gall-bladder, the icterus index was 32. The urine contained urobilin, the stools were cholic and showed persistent occult blood. The white count was 9800.

Because of these findings, a diagnosis of subdiaphragmatic abscess was entertained despite the lack of any history suggesting a possible perforation of the



Fig. 1. Appearance of ulcer niche 2 weeks after admission—flattening of duodenal cap.



Fig. 2. Appearance of ulcer niche 8 weeks after initial entrance to hospital. Note the definite decrease in size of niche and duodenal deformity.



Fig. 3. Postmortem specimen showing heaped up edges of the carcinomatous ulcer and the crater in the center.

During a five-week period of observation in the Clinic he continued on a Sippy regimen without appreciable symptoms, except for occasional epigastric fullness. A second roentgenogram taken February 21, two weeks after the first admission (Fig. 1.) showed some decrease in the size of the niche. He gained five pounds in weight and seemed to be doing well until March 14th, when he complained of a dull pain in the right upper quadrant aggravated by deep inspiration and coughing. Examination revealed a high-lying but mobile right diaphragm; a temperature of 99.4° F. and a pulse of 102. Roentgenographic examination on March 26th confirmed the findings in regard to the diaphragm and furthermore, demonstrated a marked

ulcer. The patient was therefore transferred to a surgical ward and an exploratory laparotomy was performed on April 4th. This procedure revealed an indurated area on the lesser curvature of the stomach compatible with a diagnosis of benign gastric ulcer. The subdiaphragmatic mass was found, but aspiration of the bulging prominence in the right lobe of the liver yielded only some thick bloody material. The abdominal wound was closed, and several days later an approach to the mass was attempted by way of a posterior route. However, the second exploratory, too, failed to reveal an abscess. Following this operation, the patient became moderately distended and more jaundiced, developed pitting edema of both extremities,

and after a progressively downhill course, died on the 14th of April, about three months after his first entrance to the hospital.

The necropsy performed by Dr. J. D. Kirshbaum, associate pathologist, revealed as the essential pathological changes the following: 1. Ulcerated carcinoma of the stomach with a large single metastatic node to the right lobe of the liver; metastases to the perigastric and peripancreatic lymph nodes and right upper pulmonary lobe; 2. tumor embolus and thrombosis in the portal vein; 3. benign peptic ulcer in the duodenum; and 4. moderate biliary cirrhosis.

DISCUSSION

In a very exhaustive review dealing with the differentiation of benign and malignant gastric ulcers, Rivers and Dry state that if a patient is young, has had long quiescent periods from his dyspeptic symptoms, has high gastric acidity, intermittent bleeding, diminution or disappearance of the ulcer niche radiographically, and improves under ulcer management the presumption for benign ulcer is very strong. In reviewing all the data presented in our case, one cannot fail to note how closely they agree with the above criteria for benignity.

It must be admitted that the persistence of pain in spite of treatment before his first entrance might have suggested a malignant transformation. However, other benign complications of an ulcer also cause constant pain until adequate treatment is given.

Moreover, on intensive management in the hospital his symptoms improved which again would speak for a benign, rather than a malignant process, although carcinomatous cases, too, may improve on medical treatment. The fact that he was comparatively young, had a long ulcer history, secreted a highly acid gastric juice, showed a diminution of the ulcer niche, gave a picture of a benign lesion on gastroscopic examination by a master in this field (Schindler), progressed so well clinically until his readmission when he developed symptoms of subdiaphragmatic abscess, and the fact that surgical exploration failed to reveal the true nature of the condition—all these would naturally support our belief that we were dealing with a benign gastric ulcer. The presence of the duodenal ulcer may in some way explain the high free acidity in this patient, but on the other hand, it may also be another support for the opinion that the gastric ulcer was benign, as the association of duodenal and gastric ulcer is con-

sidered rather common, about 13%, while the reverse holds true for duodenal ulcer and gastric malignancy.

SUMMARY

A case of a carcinomatous gastric ulcer is reported, which, until shortly before death, presented all the so-called "typical" findings of a benign lesion by all known diagnostic methods.

The fallibility of these diagnostic methods, at certain times, is stressed and more complete clinical study with other methods to be devised is urged in similar cases.

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VENEREAL DISEASE: SOME REFLECTIONS

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Desirable as is the increasing public consciousness of venereal disease and efforts to do something about it, the success of a movement in a democracy is endangered if it emerges too quickly and gains momentum too rapidly. Public interest and enthusiasm are tremendous assets, but there must be time for education of the man on the street, opportunity to get a proper perspective, and a chance to study the implications and consequences of proposals presented. Otherwise, loss motion develops, absurdities appear, and embarrassing retreats become inevitable.

There is also the risk that under pressure for action commitments may be made or programs approved which are too inelastic for the changing needs of a community. Principles which are fundamental are usually safer than procedures adopted under demand for immediate action. The haste of the public to do something about venereal disease calls for emphasis of the fact that a battle of a century is developing, not a skirmish of a lifetime.

Premature Procedures Already Apparent. Premature procedures, consequent mistakes, and impending retreats are already apparent. Laymen who solve problems by legalistic methods have urged enactments neither well considered nor effective, some of which have so far anticipated the creation of public opinion that sixteen legislatures have refused to pass so desirable laws as those demanding proof of freedom from

venereal disease in an infectious stage before issuance of a marriage license. Lawmakers in one state were so pre-occupied with the seriousness of syphilis they entirely forgot the equally grave menace of gonorrhea and required a certificate of freedom from only lues.

In other states, laws passed to insure freedom from venereal disease preliminary to marriage are obviously defective, cause unnecessary inconvenience, or their enforcement is in the hands of medically untrained officials instead of in the state department of health whose staff is best prepared to administer regulations for the control of communicable disease. With laws administratively improper and scientifically inadequate, a retreat with its difficulties and embarrassments is inescapable.

The prevention of venereal disease is primarily a socio-economic problem and its control is dependent upon systematized social action. While its treatment is chiefly medical, its conquest is neither the sole responsibility of the health officer nor of the medical profession, but is the greatest cooperative enterprise which has ever challenged the united efforts of the American people—the educator and the philanthropist, the legislator and the statesman, the social worker and the clergyman, the policeman and the judge, the nurse and the sanitarian, and the public and the individual.

It should be borne in mind that the public does not have a high tolerance for sustained effort and that its interest and enthusiasms quickly change. When syphilis swept over Europe towards the close of the fifteenth century it was considered a catastrophe, but fear eventually gave way to indifference. Later it became the subject of jest and funny stories. Under the repression of prudery, a long silence followed, to be broken by the high resolution and strenuous striving for efficiency associated with the World War—then public interest in venereal disease ceased. The spirocheta pallidum and the gonococcus were forgotten along with “making the world safe for democracy.”

Marginal Fields. It neither decreases the value of serodiagnosis nor minimizes the importance of any group to indicate that in syphilis, as in agriculture, there are marginal fields where the law of diminishing returns is operative and efforts are hardly justified by the yield. While it is most desirable to locate every case of lues

to control infection and to give appropriate treatment to avoid sequelae, when funds are restricted, the most important needs for the reduction of illness, death, and economic loss should come first; later, less urgent activities may be undertaken.

For example, compulsory Kahn tests on average high school or college students are not wise expenditures of limited funds. Tests done on 20,000 students throughout the country have been found to be positive once in 500. In one Midwest university 2,000 tests on freshmen were all negative. Even if the test costs only forty cents, in the first instance \$200 was spent for one positive finding which may or may not indicate the presence of syphilis; in the second, \$800 brought only the gratification of knowing that 2,000 freshmen failed to show a single positive test. Such investigations with negative results are valuable when done for the first time, but do not warrant repetition.

Positive tests for syphilis are of great presumptive value, but they are not infallible. There is no ideal serologic test for lues either as to specificity or as to sensitivity. When the positivity of tests lacks two to seven per cent of accuracy, the doing of 499 such tests before getting one positive result in individuals free from clinical symptoms would seem a typical example of putting money and effort in marginal, if not barren, soil. Furthermore, there is little to choose between the error of missing a case of syphilis which later may be discovered and the mistake of making a diagnosis and treating a person for the disease who is entirely free from it.

With syphilis on every hand and with limited funds, it would seem sound procedure to pick up the many luetic needles in reach and for the moment to forget the one in the haystack. I refer to those groups where incidence is very low and education is at its best and not to the vigorous pursuit of contacts.

Where Large Dividends May Be Expected. The great dividends on investments of money and effort in combatting venereal disease are to be obtained in education and prevention. Intensive investigation and supervision of sources of infection offer far greater returns than 500 tests on symptomless individuals to discover one positive Kahn on blood which may be repeatedly Wassermann negative. This fact does not in the least discount the value of serodiagnosis or

lessen its importance as a means of discovering new cases, but it does show where a dollar can be made to do the most in the control of syphilis.

Case finding is the most powerful weapon in the battle against syphilis. It gets the pregnant woman under treatment to prevent the birth of a luetic child, uncovers infectious cases which are contacts with others in the early stages of the disease, and thus multiplies the opportunities for dealing with more foci of infection.

Tracing contacts is often difficult, discouraging, and rarely so numerically spectacular as the Wassermann dragnet, but in the control of syphilis the discovery of one infectious case is worth the finding of a dozen seropositive individuals with late lues. Great emphasis upon infectious cases is in no sense the advocacy of the omission of thorough treatment of tertiary, quaternary, or metasyphilis. It does, however, indicate the relative value of efforts in the various stages of the disease and points to where chances of control are the most promising.

Second only in dividend production to preventive measures and early diagnosis are therapeutic procedures to render syphilitics promptly non-infectious. Of similar value is the wide use of the newer, more efficient methods to cure gonorrhea to prevent both the occurrence of new cases and disabling complications.

Scandinavia, Great Britain, and Canada have shown what was readily predictable, namely, that thorough treatment reduces the sequelae of syphilis and saves thousands of dollars which would have to be spent for the tabetic, parietic, and those otherwise made invalids. In Denmark over 98 per cent, of the patients with syphilis complete the full course of treatment; in this country 60-80 per cent stop treatment before they have twenty doses, and many more never finish taking the arsenicals and heavy metal necessary for cure. The problems of syphilis in the United States is not only one of prevention and therapy but of persistence with treatment until cured.

Holding Gains. To stamp out syphilis and gonorrhea requires more than serodiagnosis, arsenicals, and heavy metals or sulfanilamide, vaccines, and heat. The marked reduction of syphilis in Denmark and Sweden is proof that early diagnosis, prompt treatment, and epidemiological methods drastically decrease and curb this disease, but it is not a demonstration that lues

can be entirely eradicated without moral prophylaxis.

In these countries the still relatively high incidence of gonorrhea leaves little doubt their problem is not yet half-solved. It indicates clearly that contacts are still being made which spread gonorrhea and may give rise to epidemics of syphilis with the introduction of sources of infection. The measures employed to combat lues, while productive of great good, are in their final analysis those of repression and not of extinction.

The extermination of venereal disease without the suppression of prostitution requires an effective fool-proof prophylactic, an antigen of great immunizing power, or both. By only such protection is it possible to eradicate contact diseases without elimination of their means of spread. Unfortunately, no such agents are now at hand.

Unless and until the American people are ready to attack prostitution and promiscuity by vigorous education, wholesome recreation, suppression of red-light districts, improvement of the economic condition of women, and the social rehabilitation of prostitutes as far as it is practical and to provide institutional care where necessary, the public may expect to continue paying handsomely for the diagnosis, treatment, sequelae and recurring epidemics of gonorrhea and syphilis.

Even to suggest that the abolition of prostitution is a prerequisite to complete success in the extinction of the gonococcus and the pale spirochete is to risk showing an inexperience which by comparison makes Simple Simon a man of affairs. The difficulties of suppression are tremendous, but at our present level of knowledge they are not as great, nor will it take as long as the complete eradication of venereal disease with the handicap of promiscuity.

The Vigor of Delicate Organisms. The last chapters of the life history and adaptation of the gonococcus and the treponema pallidum are yet to be written. These organisms are usually considered extremely delicate and difficult to cultivate but they have not lacked the resistance to survive for many millenia nor the adjustment to meet such changes as have occurred in their natural environment.

The results of hyperthermic treatment of gonorrhea show sufficient variation to indicate that there may be strains of the gonococcus which are thermophilic beyond the range of

safe therapeutic temperatures. Since this bacterium attacks with variable virulence, its strains apparently differ in ability to invade human tissues, power of protecting themselves against unfavorable environment, or both. Highly virulent gonococci, like all microbes producing grave infection, promote their own extinction through the seriousness of the illness they cause, the thorough treatment they invoke, and the limitations they put upon the intercourse through which they spread. Less virulent organisms attract less attention, scatter widely, and survive.

Certain strains of *treponema pallidum* also exist in the body and disseminate because their symbiosis with the cells of their host is so nearly perfect as to be asymptomatic, a characteristic of great survival value because of reservoirs thus established for its perpetuation. Does this type of the spirochete develop an outer membrane less permeable to spirocheticidal substances, does its chemical composition too closely approximate tissue cells to stimulate a profound response, or does it produce so few aggressins—so weak an offense—as to cause little reaction in its host until some unfavorable condition destroys the status quo? Obviously, it is not without its own means of survival.

The *treponema* attacks all races. In whites, it frequently invades the nervous system; in blacks, the heart and blood vessels. Even in individuals of the same group and for the organs of the same person it shows remarkably diverse affinities. Perkel and Pautrier have pointed out that the reciprocal action between the host and the parasite may so attenuate the virulence of the organism as to give rise to asymptomatic syphilis. Brown and Pearce have shown that the *treponema* may enter the body through the intact mucuous membrane and cause slight if any symptoms. This fact may account for the greater frequency of asymptomatic syphilis in women. It also favors the existence and spread of lues.

Schoch has confirmed the conjecture of clinicians by his discovery of certain strains which showed resistance to arsenic both in human beings and experimental animals. There are also those able to withstand concentrations of bismuth or mercury beyond the tolerance of the tissue cells of the idiosyncratic.

If antiluetic drugs are not only spirillicidal but stimulative of defense mechanisms, their failure to invoke adequate response of the cells

of the host may result both in failure to cure and the existence of a carrier state. The behavior of certain cases of gonorrhea under treatment with sulfanilamide suggests a similar reaction between the gonococcus and its host.

Science Is Not Enough. Knowledge is available to reduce the occurrence of venereal disease and to prevent the suffering associated with sequelae of syphilis and the complications of gonorrhea. Medically, the trail has been blazed. The experiences of Denmark, Scandinavia, Great Britain and Canada are conclusive proof of the feasibility and benefits to be derived from an intelligent and sustained attack upon syphilis. Unnecessary delay in educating the public, in providing facilities for early diagnosis, in tracing sources of infection, in following up contacts, in giving adequate treatment, and in rehabilitating those who have had venereal disease is unwarranted and costly. But science is not enough.

To point to the disappearance of cholera, typhoid fever, plague, yellow fever and malaria from a community as evidence of what may be expected from a campaign against gonorrhea and syphilis is to argue by an analogy where there is a difference. These diseases have been eradicated largely by an attack on the environment through engineering, sanitation, and entomology and not by the cooperation of every individual.

The limited success in dealing with tuberculosis, diphtheria and smallpox is no criterion of what may be expected in a campaign against venereal disease. It emphasizes more the difficulties to be encountered than achievements to be recorded. Surely, if a disease so easily prevented as smallpox can assume epidemic form in hundreds of communities, 142 years after the discovery of vaccination, the *treponema pallidum* and the gonococcus are in no immediate danger of extinction.

In its use against venereal disease as in other fields of endeavor, science may end in frustration unless men can develop a stronger sense of moral responsibility. Medicine may ultimately fail to eradicate gonorrhea and syphilis because it is unable to turn off the spigot while mopping up the floor. The extermination of the gonococcus and the pale spirochete is as much dependent upon the control of the powerful instinctive drives of sex and acquisitiveness as upon epidemiology and therapy.

With syphilis occurring at the rate of four cases per 1,000 and gonorrhea with an incidence two or three times that of lues, facts seem to make the advocacy of moral prophylaxis foolish and futile. Yet, it is still potentially the most effective preventive against venereal disease and realism records no great achievement which has resulted from not trying what would work because it was difficult. Moses, the founder of preventive medicine, reinforced sanitary practice with moral and religious sanctions and has made his influence felt for forty centuries.

The developing attack on venereal disease throughout the world is humanity's acid test. It is a sensitive "destinometer" which will reveal whether man is only a brute handicapped by an imagination which gives zest to his selfishness and perverts his instincts or is capable of taking thought and making reason, goodwill, and social progress the motivating forces of his existence.

DISCUSSION

Dr. Arlington Ailes, LaSalle, Ill.: On hearing Dr. Beard's paper one gets a feeling of pessimism about the venereal disease problem—even a doubt as to the immensity of the problem and the reliability of laboratory procedures for diagnosis. This is occasioned by Dr. Beard's statement of the relative infrequency of positive Wassermans in high school and college students (less than 1 in 500), and the fact that the Wasserman test is inaccurate in a percentage greater than that (2 to 7 in 100). However, a careful reading of Dr. Beard's paper, which I have had an opportunity to do, forces me to agree with him, and that he is sounding a note of caution against overoptimism rather than pessimism.

There is no doubt that the present wave of public consciousness about the venereals will die down, as Dr. Beard says, but there will be one thing left as a result, which will be of incalculable value in the century fight against these diseases, and that will be the almost complete elimination of prudery regarding them. We will still be able to speak publicly about them by word of mouth, the public press and even by radio. It is then up to the leaders in public health to outline programs against these diseases and, because of the economic problem, stick close to fundamentals and the so-called pay-dirt procedures, rather than go browsing around in the marginal field, as pointed out in the paper. This is always good public health practice and applies as well in our efforts to control other communicable diseases and promote the public health.

There are other large groups of people, outside of the marginal fields, which would pay much larger dividends in positive Wassermans, yet the wholesale testing of any large group probably cannot be sustained for very long, and probably is not practical. With the elimination of prudery, however, we as public health officials and public health minded physicians, can keep the public always aware of the seriousness of these diseases, and the necessity for their prevention and com-

plete cure when contracted. We can at least sustain our own program even if the present wave of consciousness, about these diseases cannot be sustained. Undoubtedly education comes first, and we now have the opportunity to educate. There is even considerable doubt as to the best method of education for prevention. We in America would stress the seriousness of these diseases, but in Russia, I am told, they are stressing sex hygiene and radiant health from early childhood to adulthood, and are claiming good results. In other words they are teaching the positive rather than the negative side of the question.

The campaign of education, of course, is only successful if it leads to prevention; and as Dr. Beard points out this is a socio-economic problem, and is not alone the problem of the health officials nor of the medical profession, but of all other leaders in society as well. It involves not only the elimination of prudery so that we can talk about it, but the acceptance of all scientific principles for prevention as well. We should not only teach radiant health, freedom from disease, morality, self-restraint, self-respect and all that, but to those who are actually weak and succumb despite such teaching, there should still be hope of prevention in the judicious use of prophylaxis. In other words we should have compassion on the sinner sufficiently early to attempt to save him from the dreaded end result, and the probable spread of the disease through him to others less innocent than himself.

As Dr. Heard points out the control of these diseases is different from most diseases in that they cannot be controlled by vaccines or serums, or by control of the environmental factors. They are propagated, almost wholly, by one of the strongest of biological urges, which has never been controlled. This urge is the foundation of prostitution, which is said to be the oldest profession, and which, in its various phases, has never been satisfactorily controlled. Among the social and economic changes advocated to control prostitution and promiscuity let us add early marriages. Sublimation is hardly to be expected as a solution when it must endure for a period of ten or twenty years as is now the custom. The highest attack rate for syphilis is between 20 and 30 years of age, which coincides with the period of greatest vigor and beginning sophistication.

Where our campaign of prevention ends cure begins. This not only is for the uprose of curing the individual and promoting his own health and happiness, but to make him non-infectious to others. This naturally involves as complete case finding, as possible, particularly the infectious case, and the tracing of all sources and contacts. Here again to approach even partial success we may need some social change. We may need to approach what might appear to be social medicine, somewhat similar to some of the European methods. The state is even now supplying free drugs for all cases of syphilis, and they may later feel impelled to pay all costs, and even add compulsion or penalty for these negligent in treatment. Let us hope we can control these diseases in the American way.

Finally I must agree with Dr. Beard that the adaptability of these organisms in the human host, to match efforts at eradication, combined with our other diffi-

culties of control, will probably forever prevent complete extermination. Our tissues will probably meet the germs half way by developing some degree of tolerance, or resistance, and the germs themselves will be forced to modify their virulence by the law of the survival of the fittest during the battle of the century. This has occurred in other diseases with various races who have been in long contact with a particular disease; as for instance, the negro and yellow fever, and the white race and tuberculosis. In syphilis there is not now the same virulence as occurred in the fifteenth century, and in comparatively recent times there appears to be a lessening of virulence, not based entirely on the improvements of treatment.

With it all I think we should be optimistic, rather than pessimistic and expect in this "Battle of the Century" to gain virtual control, if not complete extinction.

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CLEFT PALATE SURGERY

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This paper deals primarily with the closure of congenital cleft palates. All I will say about the etiology is to express the belief of most authors that heredity sometimes plays an important role.

Early closure of these clefts is for me the most important factor in this reconstruction work. Many of the narrower clefts of both hard and soft palates I close successfully at three or four months of age by one operation. If the cleft is too wide to be closed by a modified Von Langenbeck operation, I do a modified Brophy or moulding of the osseous structures to narrow the cleft first and close the latter a couple of weeks later. For best results this should be done as soon as the baby is in good physical condition. Hence the palate is closed when the baby is about two or three months of age. Infants not properly fed should be hospitalized and gavigated to bring them up to weight.

The advantages of early operation are so important that they far outweigh the disadvantages. A brief summary follows:

(a) Baby is a normal feeding problem after closure of palate.

(b) Development of such palates is normal after their closure.

(c) Frequency of middle-ear disease is reduced to a minimum, because the eustachian tubes now function normally, since normal muscle action is established. The palatopharyngeus, levator veli palatini, and the tensor veli palatini muscles have a portion of their origin at the orifice of the eustachian tube which normally ventilates the middle-ear in the act of swallowing. This fact is of great importance in the prevention of chronic deafness later in life, for, unless the palate is closed they do not function.

(d) No speech defect results when palate is long and closed before five or six months of age.

(e) The child will not develop an inferiority complex due to faulty speech with its attendant

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embarrassment when with his or her playmates.

(f) Bad habits, such as immobility and lack of coordination of tongue and lip movements, are not developed when these parts are united and function normally. In neglected cases, the postnasal chambers cannot be closed by the soft palate, the tongue lies motionless in the floor of the mouth and the lips do not move properly to produce articulate speech. Hence there is no synchronization of these parts resulting in so called "cleft palate" speech, a handicap which is hard to correct in later life.

To contact these babies, children and adults, is to realize the necessity of careful, early operation. It is my opinion that the man who delays correction by surgery until the baby is five, six

The moulding operation to correct the bony foundation over which the soft structures are subsequently draped and united is carried out only on cases in which the cleft is too wide to close in one operation. This does not apply to the premaxillary bone which is always reduced when protruding.

The first step in Brophy's modified operation is to mould the bony structures with the help of the forceps I designed which is similar to the Logan forceps. 1. This is done by placing the jaws of the moulding instrument in the vestibule of the mouth, a blade on each side of the upper jaw and exerting gradually increasing but steady pressure sufficient to bring the two maxillary bones close enough together to contact the inter-



Fig. 1. Forcep designed by the author, a modification of the Logan forcep.



Fig. 2. Method of application and use.

or seven years old has done great and sometimes irreparable harm in permitting the development of an inferiority complex in such children, to say nothing about the mental suffering of both parents. No child with normal parts present, but not united, should ever be compelled to use an obturator. An honest attempt to close the cleft should always be made.

Disadvantages:

The only disadvantage I can think of in cases requiring the Brophy operation is the subsequent possible but rare lack of development of the upper jaw, which can be eliminated by using the forceps developed by the author and by some modifications of the Brophy technic.

maxillary bone in the case of a bilateral cleft, or to bring the long and short segments together at the alveolar ridge and to reduce the bony cleft of the hard palate sufficiently to successfully close that opening with the available soft tissue. This pressure is applied, maintained and released several times till the parts will remain in their new position with practically no tension on the appliance used for fixation. 2. The technic laid down by Brophy for the insertion of silk, silver wires and lead plates is followed in almost all cases. The silver wires have been replaced by me with Allegheny steel wires in some cases and found to be of decided advantage where more strength is desired.

The palate can usually be closed about two

weeks after the moulding operation and while the lead plates and wires are still in place.

The hard and soft palates are always closed in one operation. A two-stage affair necessitates an extra operation, an extra anesthetic risk and tends to cause more scar tissue. First step: The mucoperiosteal flaps are raised from the bone and the edges of the soft palate are split into the musculature of the azygos uvulae. No more is done in the way of preparation or relaxation of tissue in the ordinary case. Shortness or tightness of the palate is met with appropriate means of relief as described below.

Closure of the flaps is the next step; this is done by placing interrupted chromic gut sutures into the upper or posterior surface of the soft palate. Starting in the mucous membrane on the nasal side and passing a half inch full curved cutting needle down through the aponeurosis, repeating the same in the reverse order on the opposite side, the suture is tied with several knots on the nasal surface of the palate. Sutures are all cut short, up to the knot. A cleaner wound results, enhancing its ability to heal by first intention which is so desirable in this work. These sutures extend along the entire length of this surface of the soft palate. The oral surface of both hard and soft palates is closed with dermal sutures. Mattress sutures interspersed with interrupted sutures are used and as described above four to six knots are tied and cut short.

The sutures are always allowed to remain for at least ten days to two weeks. If wires and lead plates have been inserted two weeks previously they too, are removed at this time. Thus the wires and plates have been in not longer than four weeks and this is ample time. Using the Brophy technic the jaws are kept wired for at least six weeks and the palate is closed in infants at about eighteen months, while my method corrects all palatal defects before the third month of life, a decided advantage to the baby in its development.

Should more relaxation of tissue be desirable or necessary for closure, it is obtained by making lateral incisions along the alveolar ridge or, later in life, along the necks of the teeth if wanted in the anterior part of the palate. Relaxation at the junction of the hard and soft palate or in the soft palate alone is obtained by making incisions distal to the tuberosity and with a chisel

tripping the tensor palati off the hamular process. These openings are packed with iodoform gauze impregnated with compound tincture of benzoin. Such packing has a threefold action: first, to control hemorrhage; second, to further approximate the tissue; and third, to prolong the relaxation to further favorable healing.

In conclusion, let me say that the method of reducing the size of the cleft described yields several decided advantages:

1. The age limit recommended for Brophy's operation is six months, rarely longer, while by the method devised by me no age limit has been established as yet because it is still too new. My oldest case was six years of age, several at two and three years and all responded nicely.

2. The palate can be closed much earlier than eighteen months.

3. Palate closed at two or three months, often with one operation.

4. Better development of palatal tissues because of early union, usually making speech training unnecessary.

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DISCUSSION

Dr. F. W. Merrifield, Chicago: I think it probably would be well to say in opening that there is little doubt in my mind that the successful completion of an operation on a child is one of the greatest things that can be done for any child. A child who has a club-foot or a congenital dislocation of the hip is handicapped, it is true, but if that child can present a pleasant face and smile, and can speak distinctly, he is not under the handicap of harelip uncorrected or corrected poorly, or with the speech defect that accompanies all the cleft palates. I must congratulate Dr. Schultz on his excellent presentation, and the results speak for themselves.

Since 1828, historically, we have had the search for successful lip and palate operations, and since then many men have devised many operations on both lip and palate. The results obtained are matters of difference of opinion. There is no royal road to Rome. Probably one great departure in the correction of the palate was that devised by Brophy, substantially the technic Dr. Schultz has presented. As he remarked, it has been condemned by many people but it still has advocates. Dr. Schultz says it is not applicable to every case, and I think the controversy arose over the severity of the operation and the occasional report of a case in which the bones of the face or maxillary bones failed to develop. Brophy's premise was that all the structures were there in more or less natural condition. Whether that is the case there is some room for discussion and the fact that development did not occur in a number of cases probably supports the theory that they did not continue to develop.

However, more recently, Logan and Kronfeld have pursued investigations on the rationale of operation, particularly with relation to development of the structures and teeth. Their investigations have done a great deal to re-popularize the technic of bony replacement prior to the attempt to close the soft tissues. So far as functioning of the palate is concerned, it depends entirely upon the approach to true muscle function when the soft tissues are re-united. Unless some soft tissue can be provided, or is there already, the closure of the palate is not sufficient to provide function. The lengthening is not enough. The closure of the oral pharynx depends upon adequate muscle control not only by the muscles of the palate but also those in the pharynx.

The palate lengthening operation devised by Dorrance severed the blood supply of the palate, similar in principle. The operation of Brown, associated with Blair in St. Louis, does not sever the blood vessels supplying the palate; he merely pushes the palate back. These operations are not applicable to cases in which the Alveolar ridge is cleft. He sutures the palate to the nasal mucosa.

Regarding the preservation of speech function, the chances are that very few operations for harelip or cleft palate are 100 per cent perfect, and the possibility is that absolute speech function is rarely more than 70 or 75 per cent. perfect without speech training. The most favorable time is thought to be within the first year, but an operation between the first and second year, up to twenty-four months, returns less in speech function than the earlier operation. The advantage claimed for the later operation is the greater development, and children stand operation better at a later date. So far as various stages of operation are concerned, I cannot understand the reason for doing twenty or thirty on a palate as Dr. Schultz has said sometimes happens. Our plan has been to close the lip as early as possible, and it is astonishing how much the pressure thus developed does to close the palate. The second operation is done about a year later. If the soft tissue available appears to be inadequate, a stitch may be put in by means of lateral incision and elevation of the palate, done at the first operation, and with packing the palate remains elevated and a certain amount of space is gained by leaving it in for several days.

Great importance is to be paid to preoperative and post operative care. I am essentially in accord with everything Dr. Schultz has said, and I have enjoyed listening to his paper very much.

Dr. Casper Epstein, Chicago: Until a few years ago it was generally thought that a cleft palate had as much tissue as was normally present in the normal baby, but that the deformity was due to lack of apposition of the tissues rather than to lack of the tissue itself. Only recently has it been determined that there might be a lack of tissue as well as a lack of union in the separated tissue. This is evidenced by the fact that recently operations have been performed by which the palate is lengthened in order to obtain the proper speech. The breadth of the upper jaw is just as wide as it should be; it is wider than normal in direct proportion to the width of the cleft in the palate.

Dr. Brophy used to say that we treat these cleft

palates as any surgeon would treat a fractured arm, i.e., put the bones into proper apposition and keep them there until they are completely united.

There is one form of cleft palate that Dr. Brophy spoke of that is not mentioned in this classification shown on the chart, namely, a complete cleft from the uvula to the ridge in the midline. Dr. Brophy has pointed out that Forms one to six inclusive, should be operated on between 18 and 22 weeks. Since the work of Logan and Kronfeld we have learned that Forms 7 to 14 inclusive should be operated upon between 10 and 12 weeks. The bones should be brought together with the ridge in proper position, and so held for four to six weeks. It has also been shown that between 10 and 12 weeks of age there is a very definite amount of space between the permanent and deciduous tooth buds and it is possible to so place the wires as not to injure these buds. Therefore the first operation should be performed between 10 and 12 weeks in order to close the bony ridge. Now as to Forms 1 to 6, excluding Form 1—these should be closed at 18 to 22 months because it is about that time that the child begins to speak and it is not only necessary to obtain anatomic development but functional development as well; if the palate is closed earlier it is difficult to get functional development, more difficult than if the tissues are placed in their proper position at the time the child begins to talk. I close the lip about four to six weeks after the hard palate is closed.

Regarding the preparation of these children, I call in a pediatrician for a complete and thorough examination.

I feel very definitely that the thymus should be radiographed and if found to be enlarged, it should be treated with the x-ray. I think it has a very definite bearing on ether anesthesia, and I have seen ether anesthetics administered to babies, both with enlarged and with normal thymus glands. Those in which the thymus gland is normal in size react much better to the anesthetic than those children in which the gland is enlarged. The child is exposed to ultraviolet radiation for two to three weeks before operation. There is absolutely no reason why these children should not be in the best possible condition for operation. Following operation these patients are placed in a private room or with other cleft palates or cleft lips. We do not put them in the same room with other types of cases because they are very susceptible to infections. We tie their hands down to the bed or put on arm cuffs, so as to prevent them from putting their hands in their mouth. I emphasize to the nurses that their job is just as important in keeping the mouth clean as is the surgeon's in closing the cleft because if allowed to go uncleaned, suppuration may occur, with subsequent sloughing and an opening.

Dr. Schultz also mentioned the possibility of lack of development of the upper jaw with the Brophy operation. During the time I was associated with Dr. Brophy, I did not see one case in which there was a lack of development. It may be that my next one will, but in the series we have had I have not seen one. I do not do the moulding operation although I can see its advantages. I have been able to close the palatal ridge

with one operation using silver wires and lead plates.

I think we should avoid a lateral incision whenever possible, as it increases the amount of scar tissue and retards the movements of the soft palate in speech. In a very wide cleft I perform a series of operations, first swinging a flap from one side and then swinging a flap from the other side, until the entire cleft has been closed, so that the entire palate does not have to be drawn across to cover the defect in one operation. I find it is a decided advantage.

Dr. L. W. Schultz, Chicago, (closing): Just a few words with reference to what Dr. Merrifield has told you. Men who have tried to close these wide clefts have met with frequent failures, and they will continue to fail if they try to close the tissues under tension. The flaps must fall together. Most of mine not only go together, but overlap before I insert the first suture. Such cases should be one hundred per cent. successful.

An early closure means more to these babies than any other treatment I know of, but it is very difficult. One slip of the suture and a buttonhole results. Moulding the bones is paramount where indicated and should be done first. This is done easily and accurately with the forceps I devised, which permits an unobstructed view of the parts being moulded and there is no slipping. This technic is more accurate than the one I used originally.

Nothing has been said about the seasons best suited for these operations. Many men will not operate during the winter. I operate throughout the year, winter or summer and see no reason why it should not be done as successfully during winter as during summer. Obviously, there is less likelihood of the development of contagious diseases and pneumonia in summer time, but postoperative care overcomes this tendency during the cold season. If the work is done correctly, the parts properly approximated and the blood supply preserved, the results do not vary with the seasons.

Lack of success with the moulding operation may be due to the desire of the operator to overcorrect. The result is a curve of the arch toward the median line on both sides, which is poor surgery. These structures, both hard and soft, cannot be handled too delicately.

Relaxation of the soft tissues, conservation of the blood supply and proper approximation are fundamental for success in palatal surgery. Next in importance to get good functional results is speech training.

We are fortunate to have a teacher in Chicago who is very successful with those cases. Her intelligence and patience, both of a high type, are applied unsparingly in the training of these children. And they need such care. They are born with certain inherent qualities. They do not have to be taught how to swallow, but when they try to speak and are unsuccessful, no matter how hard or how often they try, they are defeated. That experience constitutes an insult repeated every time they try to talk. They cannot reproduce the sounds made by their mother.

For that reason the palate should be closed so that they have the proper anatomical mechanism, and with infinite patience, they should be taught the proper use

of tongue, palate, etc., until the goal, viz., perfect speech is reached.

PEDIATRIC TREATMENT OF OTOLOGIC SEPSIS, INCLUDING MENINGITIS

PHILIP L. ARIES, M. D.

CHICAGO

The general principles of treatment of otologic sepsis in children are the same as for sepsis resulting from infection anywhere in the body with special treatment to the ear and its associated structures. Maxwell¹ recently discussed this subject from the viewpoint of the otologist as "The Management of the Septic Patient with Otitis Media" to emphasize the fact that otitis media may be an incident in the course of a septic condition originating elsewhere. He points out that 1. a local or general infectious process producing a picture of sepsis may antedate the otitis media which is secondary and not actually responsible for the sepsis. 2. In the course of a suppurative otitis media an intercurrent infection as pneumonia, endocarditis, or a kidney infection may develop and cause the septic state. 3. a true otitic sepsis from otitis media, mastoiditis, or sigmoid sinus involvement may exist.

It is a common experience to find the pediatrician attributing a spiking fever to an ear infection while the otologist insists that the local findings do not warrant surgical interference. The reverse is also true at times. It falls upon the otologist to determine when an ear infection requires surgical drainage and also the type and extent of the surgical procedures to be performed. In the virulent types of infection it is also necessary to institute early such therapeutic measures that may bolster up the patient's resistance to the infection or that may directly inactivate the causative organisms and the toxins they produce. The timely administration of such agents, in addition to judicious surgery, may prevent serious otologic complications as septicemia and meningitis. In the event of the development of serious complications, the administration of such therapy will offer the patient a better chance for an eventual recovery.

The members of the eye, ear, nose, and throat section of this society are primarily interested in the surgical aspects of otologic sepsis. The

¹Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, May 17, 1938, Springfield.

problem has many phases, some of which are still in a controversial state even among men of long experience. We pediatricians look to the conclusions that result from the exchange of ideas at meetings such as this one. All agree that drainage of an infected area should be instituted at the opportune time. It requires good judgment and a thorough knowledge of pathology in addition to technical skill to do this and yet not break down naturally protective barriers. The symptoms and physical findings will dictate to the experienced surgeon whether a mastoidectomy or more extensive exploration of the sigmoid sinus is necessary. The question as to whether the internal jugular vein should be ligated has been discussed by Ersner and Meyers² who believe this operation offers no great benefit. Other authorities have found from their experience that jugular vein ligation is absolutely necessary in many instances. Over-manipulation can, however, undo the benefits of a well-indicated and timely performed operation.

Once the offending organisms and their toxins have entered the circulation and symptoms of septicopyemia and bacteremia become manifest, the treatment must be systematic and rational if the patient is to survive. Secondary foci of infection must be watched for and drained at the opportune time. It has been shown that organisms do not multiply in the blood as much as there is a constant invasion of the blood stream by organisms from primary and secondary foci of infection. Other pathological processes caused by the original infection as severe nutritional and digestive disturbances, particularly in young infants, require special treatment. A disturbed protein, mineral, or water metabolism may be set up. Toxins destroy blood elements and overtax the capacity of the body to produce new red and white blood corpuscles. In the same way antibody production is curtailed. The resisting forces must be supported by outside assistance in order to turn the tide toward an eventual recovery, even after the foci of infection are drained or eradicated.

In the terrifically virulent types of infection which produce rapidly progressive and fulminating septicemias such aids are unfortunately not effective. Sera, blood transfusions, and drugs are of no avail. In the more slowly acting types of infection where the resistive forces

of the patient fail gradually after days or weeks these medical adjuvants lend that extra stimulation that may give an apparently hopeless situation a favorable turn. In evaluating therapeutic procedures Brennemann³ reminds us that "the human being and notably the child has an intrinsic power of returning to a normal state and has moreover a mechanism of defense and of attack, of immunity and of resistance, to many diseases that has taken ages to develop and that in many instances is a marvel of efficiency as compared with so many of our conventional therapeutic procedures."

In the anxiety to do something for the patient, to make accurate diagnoses and to know from day to day what course the disease is taking, it is always necessary to keep in mind that rest is a most important aid to recovery. Physical examinations, therapeutic and laboratory procedures should be carried out with the least possible physical and mental disturbance to the child. Not one superfluous manipulation should be permitted. Sedation may be produced by such hydrotherapeutic measures as sponging or tepid packs. These are often superior to antipyretics in reducing a high fever. Sedatives as amytal and phenobarbital are useful. When other measures fail an irritable, exhausted patient gets relief only upon the administration of morphine or pantopon.

Feeding a sick child often becomes one of the major problems in the management. In the case of the infant a well balanced, easily digested milk mixture is important. There is a marked individual variation in the type of food an infant can tolerate when ill. It is here that the familiarity of the pediatrician with these preparations offers especially great assistance. It takes a patient and tactful nurse to feed a sick child. This is particularly true in the large number of children we see who have poor appetites under normal conditions. Easily digestible food of high caloric value made to please the eye as well as the palate serves best. Forced feedings are usually unsuccessful and irritate the patient to an unwarranted degree.

It is imperative that an adequate amount of fluid be ingested. Fluids dilute and increase the elimination of toxins. The child should take by mouth, whenever possible, at least as much fluid as would be taken under normal conditions. This is usually about 1200 cc. a day for

a two-year-old child. The tongue should be moist at all times. Glucose may be added to fruit juice drinks. When fluids are not taken or if vomited it is necessary to administer fluids parenterally. We have found the method of choice to be the continuous intravenous drip of a five per cent. dextrose solution, dextrose in saline or in Hartmann's solution. The intravenous route is less painful and larger amounts of fluid can be given over longer periods of time as compared with subcutaneous, intramuscular, or intraperitoneal administration. The veins usually used are the cuboidal or the ankle vein anterior to the internal malleolus. Spivek⁴ has described an efficient technique for intravenous fluid injection. The fluid is permitted to drip into the vein at a rate of 40-60 drops per minute. Acidosis or ketosis may complicate the picture. The administration of five per cent. dextrose or Hartmann's physiologic buffer salt solution, which is essentially a mixture of Ringer's solution and sodium lactate is most beneficial. Ten cc. of molar Hartmann's solution per kilogram body weight is diluted with five volumes of distilled water. One-third to one-half the amount may be given intravenously and the remainder subcutaneously.

Biotherapy has come to play an important part in the treatment of septicemia. In general all sera have more prophylactic than curative value. As a prophylactic measure the intramuscular injection of 20-40 cc. of whole blood from a parent and repeated in two or three days has merit. Inasmuch as many of the infections are streptococcal in nature, scarlet fever convalescent serum, when available, given early by the intramuscular or intravenous route in 40-100 cc. doses is perhaps even more beneficial.⁵ The same may perhaps be said for polyvalent antistreptococcus serum. Other available sera are the anti-pneumococcus and the anti-influenza.

Prophylactic blood transfusions and, if possible, from donors who have recently recovered from streptococcal or pneumococcal infections in the respective types of cases, offer good therapeutic responses, when resorted to early. Kolmer⁶ states that the benefit comes from the fresh hemoglobin, erythrocytes, leukocytes, agglutinins, antibodies, and non-specific leukins and plakins that are supplied to the patient. The same, of course, holds in the active treatment of septicemia. Blood transfusions are given in

small volume—50 to 150 cc.—daily or on alternate days. The temperature reactions and the blood picture are guides as to the number required. Beside typing it is essential that direct blood matching be done before each transfusion is given to avoid subgroup reactions. In the later stages of the disease when cardiac reserve is impaired, the circulation should not be overloaded. Larger amounts of blood may be given slowly by the drip method. Immuni-transfusions of the specific or non-specific types have been advised.

Sulfanilamide has renewed interest in chemotherapy. It is most effective in hemolytic streptococcus infections. The drug must be given in adequate dosage and under laboratory control to prevent untoward results. We must be mindful of possible kidney damage, blood dyscrasia, and skin reactions that have been reported. Sulfanilamide is given by mouth when possible. One-half grain per pound body weight per day in six divided doses every four hours is the effective dose that can be given safely to most children. The upper limit is 40-60 grains for a 24-hour period. Sodium bicarbonate should be given grain for grain to prevent acidosis. Magnesium or other sulfates are not administered at the same time with the idea that the cyanosis which may develop is due to sulfhemoglobin. Fantus does not agree with this hypothesis. He states that the cyanosis may be due to a comparatively harmless blood pigment formed when the dye is ingested. The drug should be discontinued directly should any reaction become manifest. Sulfanilamide may be given intravenously or subcutaneously as a 0.5 per cent. solution in 5 per cent. dextrose in the calculated dosage when not tolerated by mouth. Oral administration can be resumed again after the gastric disturbance has subsided. As a check on the dosage, the sulfanilamide content of the blood may be determined. The optimum therapeutic effect is produced when the concentration is kept at 10 mg. per 100 cc. of blood. The drug should be continued until symptoms have subsided.

Stimulating drugs as caffeine, adrenalin, atropine, and strychnine are necessary at times to combat cardiorespiratory collapse. Oxygen and oxygen-carbon dioxide mixture aid when there is cyanosis.

For many years there has been active discus-

sion among pediatricians as to the management of severe nutritional disturbances in infants who have more or less ear disorders. Otitis media is one of the frequent parenteral infections which precedes or which may develop during the course of such a disturbance. Because of the lack of reaction on the part of the infant, the otological evidences of infection may be slight and entirely overlooked. The process may continue in spite of myringotomy and spread from the middle ear to the mastoid and even to the meninges.

Some observers practice early antrotomy in these cases. Others are more conservative but at times lean too far in this direction. The following case, now under observation at the Cook County hospital on the infant service of Dr. Joseph Greengard, serves well to illustrate this point:

A five month old infant, weighing $14\frac{3}{4}$ pounds was admitted on March 23, 1938, because of a fever of 103 degrees, cough, and irritability of several days duration. Physical examination revealed slight injection of both ear drums with visible landmarks. Dulness and rales were found in the pulmonary bases. X-ray revealed increased hilar markings. A secondary anemia was present and a white blood count of 11,300. There were 52% polymorphs, 40% lymphocytes and 8% monocytes. During the next few days the left ear drum became dull and the markings obscured. Six days after admission the left drum was incised. A small amount of sanguino-purulent material drained. During the following week the discharge became profuse but there was no mastoid swelling or tenderness. The child took fluids and nourishment poorly.

April 4—120 cc. Hartmann's and dextrose solution was given intramuscularly by syringe.

April 6—300 cc. of the same solution was given subcutaneously.

April 8—400 cc. solution was given intraperitoneally.

On April 11, thirteen days after the paracentesis a slight fullness was noted over the left mastoid area. The child began to look toxic and was dehydrated. Severe diarrhea developed. Conservative management of the ear was decided upon.

April 12—300 cc. of solution was given intraperitoneally.

April 13—1000 cc. dextrose in saline was injected by intravenous drip into the right ankle vein. Citrated blood, 150 cc., was also allowed to drip into the vein. The stool culture revealed the *Bacillus pyocyaneus*.

Sulfanilamide, gr. iiss t.i.d. was begun on April 15.

April 16—300 cc. dextrose in saline subcutaneously.

April 17—300 cc. dextrose in saline subcutaneously.

April 18—400 cc. dextrose in saline intraperitoneally.

The child took a turn for the worse on April 18. He was weak and pale. The temperature dropped to a subnormal point. Nasal oxygen was administered. Caffeine sodiobenzoate, gr. ii, was given as a stimulant. The blood CO_2 combining power revealed a slight acidosis.

Intravenous drip was started in the left ankle vein in the afternoon of April 18 and continued to April 20, 3200 cc. dextrose and saline and 150 cc. citrated blood being administered during this period. It was resumed the following day when 500 cc. dextrose and saline and 150 cc. citrated blood were injected into the left cubital vein. The following day the baby suffered episodes of collapse and had a severe diarrhea. On this day an antrotomy was performed by Dr. Curry under local anesthesia. Chronic granulation tissue was curetted from a large antral cavity. After the operation 1000 cc. of dextrose and saline and 125 cc. of citrated blood were allowed to drip into a vein. Sulfanilamide was continued to May 1. The child began to improve immediately after the operation. A temporary remission occurred on May 5 due to a collection of pus which was removed from the surgical wound.

The treatment of otitic meningitis requires the surgical drainage of the focus of infection in the mastoid or lateral sinus. The same general measures discussed in combating the general infection are instituted. In addition purulent material has been drained from the subarachnoid space by spinal or at times cisternal punctures. The spinal fluid drainages were made daily or more often until a sterile fluid having a normal or almost normal pressure and cell count was obtained. Today, however, we are witnessing a most dramatic improvement in the treatment and prognosis of septic meningitis, particularly the streptococcus and pneumococcus types, with the advent of sulfanilamide and sulfanilamide derivative therapy. Many recoveries from these fearsome complications are now being reported. With this treatment the frequent spinal fluid drainages are often unnecessary. Spinal punctures are done once or twice a week and then once in ten days or two weeks for a check on the spinal fluid to determine how long therapy should be continued. The drug is administered for about ten days after the symptoms and physical findings have returned to normal and the spinal fluid has at least nearly approached a normal protein, sugar and cellular element level in order to avoid exacerbations.

The tendency is to get away from intraspinal injections of specific sera or drugs. Antisera for the pneumococcus, influenza bacillus, and streptococcus have been administered intraspinally with occasional recovery. There is, however, evidence that the intravenous injection of diluted serum has all the advantages without the local irritative effects intraspinal injection produces.

Continuous spinal drainage simultaneous with the intravenous administration of hypotonic (0.45%) sodium-chloride solution, which promotes rapid spinal fluid secretion, has been advised by Kubie and Retan.^{7, 8} The treatment is kept up continuously or intermittently for several days. I have seen no beneficial results in my observations of this type of treatment.

Surgical drainage of the cisterna pontis lateralis was attempted in one case of otogenic pneumococcus meningitis I observed. Large doses of polyvalent antipneumococcus serum were administered intravenously as well. The outcome was unfavorable. Sulfanilamide was not used at that time.

The drug caffeine sodio-benzoate has been found effective in reducing intracranial pressure and so helps in the relief of headache. A spinal puncture may be required to relieve severe headache. Drugs useful in alleviating pain and restlessness are sodium amytal, chloral hydrate and avertin. Morphine has a tendency to increase the intracranial pressure and contract the pupils, so obscuring valuable observations.

For the treatment of convulsions the rectal administration of chloral hydrate in starch water is of benefit. The intravenous injection of 25 to 50 cc. of 25 to 50% dextrose or sucrose solution lessens cerebral edema. Two cc. of 25% magnesium sulfate injected intramuscularly every eight hours acts in the same manner. A spinal puncture, after the convulsion has ceased, may be necessary to prevent the recurrence of convulsive seizures.

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DISCUSSION

Dr. George Woodruff, Joliet: In his first paragraph Dr. Aries cautions us to be sure that the sepsis is truly otitic in origin and not due to some other cause. I think that this caution is important, because in a patient where the sepsis was due to some other disease, recognition of the true state of affairs might avoid a needless and, under the circumstances, a dangerous operation. There are cases, I believe, where the pediatrician and otologist can very materially aid one another in deciding whether the sepsis is or is not of otologic origin. Furthermore, it may at times be important to decide which of two ears is responsible for a septic condition. This, of course, may be a very difficult decision to make.

When we speak of otologic sepsis we think of several conditions, first, perhaps, of infective phlebitis and thrombophlebitis of the sigmoid sinus: second, of sepsis existing in some cases of acute mastoiditis without phlebitis or thrombophlebitis of the sigmoid sinus: third, of that rather rare entity known as primary jugular bulb thrombosis, of especial importance in childhood. These various forms require some variation either in the amount or kind of surgery necessary, the decision properly resting with the otologic surgeon.

The question of jugular vein ligation could be argued for several hours, probably, without a definite decision being reached. I shall only say that I believe there are cases in which the majority of experienced men would feel satisfied only after they had performed a ligation.

Patients afflicted with any of these forms of sepsis need effective and judicious supportive treatment. These dangerously sick children, in my opinion, should have the services of someone especially trained in carrying out this treatment. At the same time, both he and the otologist should be on the lookout for complications in contiguous and distant locations.

The question of fluids and feeding should, where possible, be under the direction of a man who is expert along these lines.

Dr. Aries' remarks with reference to sera are of interest. The fact that they have much more prophylactic than curative value of course suggests their use in cases in which the development of otitis media and sepsis is feared. Convalescent serum, of course, has been used widely in scarlet fever. It would be of interest to know the incidence of otitis media in cases receiving the convalescent serum as compared to those who did not receive it.

Blood transfusions have been advocated in otologic sepsis. Some well-known authorities give them only when the blood count has fallen below a certain figure, and others advocate repeated transfusions for their effect on the sepsis itself, even though the secondary anemia is relatively slight. From my own rather limited experience with thrombophlebitis of the sigmoid sinus, it appears that if the secondary anemia is not too

great, satisfactory improvement usually results after appropriate surgery and plenty of fluids.

Sulfanilamide is of course being widely used, and appears to be of definite value in otitic sepsis, especially in that due to the streptococcus.

The question of severe nutritional disturbances in infants with more or less evidence of otitis media may be considered for a moment. The pendulum did swing very far toward radicalism in some localities a few years ago and, in general, has now swung back. However, there are cases of this nature that call for close cooperation between the pediatrician and the otologist, although I have seen none which required mastoidectomy primarily on the basis of a nutritional disturbance.

In the case that Dr. Aries relates, I believe it would be of interest to know the kind of bacteria found in the ear on smear and culture. Was the conclusion reached that this was a chronic otitis media? The statement is made that chronic granulation tissue was culled from an enlarged antral cavity. I recently saw a child with a very severe sepsis, presumably of otitic origin, although the ear had healed early. In this case a recovery was obtained without surgery. Transfusions, sulfanilamide and good general care was the regime. In otitic meningitis, of course, the talk is all of sulfanilamide, and it appears to have definitely reduced the mortality. Efforts are now being made to evaluate the value of mastoid operation with wide dural exposure, drainage of the cisterna pontis lateralis, repeated spinal drainage and other measures. If enough cases are found that recovered on sulfanilamide alone, without surgery, it may relegate some of the time-honored procedures to a very minor place.

I think it is well that we be reminded that in infants and young children, purulent otitis media, uncomplicated, usually causes a much higher fever than it does in the adult: or, to state it another way, a fever which in an adult makes us apprehensive of an existing or impending complication, in the infant, may be only a usual manifestation of a suppurative otitis media. I would like to ask how the figures for the optimum concentration of sulfanilamide in the blood were computed.

I think most otologists need to hear a paper of this kind, particularly those of us who have not recently been hospital residents. Dr. Aries' paper, if studied and digested, will help us in the phases of this problem in which we are prone to be weak.

Dr. Philip Aries, Chicago (closing): I wish to thank Dr. Woodruff for discussing this paper. His remarks are very pertinent. I am sorry I cannot answer some of his questions, especially the logical question as to what organism was cultured in the case reported. Unfortunately in caring for sick infants in a large hospital, laboratory procedures are sometimes lacking as is true in this instance. The infant had an acute involvement of the middle ear and antrum.

The optimum concentration of sulfanilamide in the blood has been determined by a trial and error method. It is the amount that gives a favorable therapeutic response but within the limit which readily produces untoward reactions.

THE VALUE OF THE ROUTINE ELECTROCARDIOGRAM

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The electrocardiogram is an important adjunct in the diagnosis of cardiovascular diseases. There are many conditions involving the neuro and muscular conduction system of the heart, which are not elicited on physical examination or x-ray. These findings can be elicited by the electrocardiogram only. On the other hand there are certain cardiac conditions which are not elicited by the electrocardiogram, but which are definitely ascertained by a careful physical examination. This is essentially true in valvular heart disease.

The question often arises as to the unnecessary taking of routine examinations in cases in which the need is not apparent. This was manifested in an article in one of the lay journals recently, tending to show that all physicians who were consulted by this particular individual, recommended a Wassermann blood test. There is no question that the Wassermann is a very important routine laboratory procedure in all physical examinations. The same can be said for the importance of the electrocardiogram.

The value of the electrocardiogram can readily be understood when one knows that he obtains a definite working graph of the heart. The time has passed when patients suffering from cardiovascular diseases were put to bed, given digitalis and told to remain there indefinitely. In other words, they were made permanent invalids. When the exact nature of their condition is known, and the exact exertion to which the myocardium can be subjected, then a definite plan can be established for that individual to rehabilitate himself, so that he can carry on under the existing handicap. On the other hand, if electrocardiograms were not taken, these hidden pathological cardiac conditions would not be found and probably the patient would be doing work far beyond the endurance of his cardiac muscles, and as a result, would collapse and death follow much sooner than it would have occurred had the definite condition been determined, and his life planned accordingly.

The electrocardiogram is a characteristic tracing of the particular individual, with special

reference to his cardiovascular muscular system at the time that the tracing is taken. In many cases the electrocardiogram can be used as a means of identification of that particular individual in the same manner that finger prints can be used for identification. It is true that the electrocardiogram varies from time to time, provided, however, there is definite change in the myocardium of that particular individual. Otherwise the tracing remains identically the same.

The electrocardiogram also reveals the progress of any particular abnormal condition which may be present, or the return to normal of that particular myocardium involved. This is an adjunct to physical examination which cannot be replaced by any other procedure known at the present time.

The reading of the electrocardiogram is a very important procedure. There are many who interpret the slightest changes in the tracings as pathological. There are others who require drastic changes in the electrocardiogram before a diagnosis of myocardial derangement is made.

Now in presenting these cases representing 1500 patients in which electrocardiograms were taken, we attempted to assume a middle course in the interpretation of these readings. These particular readings were later confirmed either by definite physical findings or postmortem examination. The three standard leads have been utilized in all cases with the addition of the fourth chest lead. In the first series the chest lead was taken so that all positive deflections were represented by negative ones on the graph, but the later series conform with the procedure lately adopted by the American Heart Association.

It is important before interpreting the electrocardiogram to know the position the patient was placed in at the time the electrocardiogram was taken, as some variations may occur, depending upon the position which the patient is in at the time the electrocardiogram is taken. In all of the cases electrocardiograms were taken in the recumbent position, and only after the patients had been allowed to rest on the table for at least five minutes. Other important factors are the taking of medication of some kind previous to the taking of the electrocardiogram. We know that certain drugs will alter the electrocardiogram so as to make a false impression. Digitalis,

and its group, will alter the electrocardiogram. Quinidine, atropine, ephedrine, calcium and allied drugs of that nature will also alter the electrocardiogram. Acetyl Beta Meta Choline Chloride or Mecholyl is another drug which drastically affects electrocardiograms. This drug causes a prolongation of the P.R. interval, and as a result produces a slowing of the cardiac rhythm. Essentially it is important to know that all drugs which act on the sympathetic or parasympathetic nervous systems may affect the heart, and in turn produce changes in the electrocardiogram.

Certain vitamin deficiencies, especially deficiency of vitamin B-1, will produce changes in the electrocardiogram. Therefore, it is important to determine before hand any vitamin deficiency. The changes, however, produced by the lack of vitamins are not as marked as those produced by pathological changes in the neuromuscular conduction system of the heart.

The importance of the electrocardiogram has been realized by the large insurance companies; as a result in insuring individuals for large amounts, electrocardiograms are invariably taken. Not so long ago there was an insurance racket perpetuated against various insurance companies in producing electrocardiograms purporting to reveal severe myocardial damage, or other cardiac changes. These electrocardiograms were produced after the individual had been given large doses of the various drugs which do produce drastic electrocardiogram changes. This further illustrates the importance of knowing whether the patient has had any medication before electrocardiograms are taken.

These 1500 cases from which the data is obtained were not subjected to a routine electrocardiogram examination. The cases are divided into three groups: One group in which cardiac disease was evident on physical examination and from history elicited. Electrocardiograms were taken to determine the exact degree of damage present and further to confirm the physical findings and history. The second group had no definite complaints referable to the cardiovascular system, but on physical examination there was some indication that there might be cardiovascular disease. Electrocardiograms taken in these cases revealed a certain percentage of electrocardiogram abnormality. The third group consisted of patients who complained of cardiovascular symptoms without any apparent phys-

ical findings. The electrocardiograms were taken in these cases to determine the cause for such complaints.

In the first group, electrocardiograms showed abnormal tracings indicating pathological changes of the heart muscle or neurogenic system in 90% of the cases. The second group presented abnormal electrocardiograms indicating such changes in 85% of the cases. The third group revealed electrocardiograms which presented abnormal findings in only 50% of the cases.

Numerically the groups were divided as follows: 600 cases in the first group revealed disease in 540 electrocardiograms. The second group consisting of a total of 700 cases revealed disease in 595 electrocardiograms. The last group consisted of a total of 200 cases, and revealed disease in 100 electrocardiograms.

To illustrate the value of the electrocardiogram I will mention ten cases, typical of certain groups, making up the total reviewed:

Case 1, the most striking example, is a case of auricular fibrillation with myocardial damage of a rather severe degree which has lasted for a period of 20 years. This patient has been followed up from time to time and his cardiac condition checked by frequent electrocardiograms. At the time the diagnosis was made, patient was given definite instructions as to his physical and mental limitations. He was also instructed in the proper use of a drug, which would control his heart if it became too rapid, or if he felt uncomfortable. This particular drug which he was instructed to take was quinidine. Now most cardiologists will admit that it is foolish to attempt to restore a normal cardiac rhythm in cases of auricular fibrillation. No attempt was made to restore the normal rhythm in this case, but quinidine was given from time to time when the heart began to show evidences of marked increase in the fibrillation. The patient was able to determine exactly when he needed this medication and as a result he has been able to prolong his life possibly 15 years, and surely at least ten years. As most cardiologists admit that the ordinary span of life following auricular fibrillation is at the average five years, and in exceptional cases ten years, and as mentioned this patient has already had this condition 20 years, at the present time he appears to be in rather good condition, in spite of this severe handicap. It is true that he is not able to carry on an occupation requiring severe exertion, but he is able to carry on very light clerical work and able to take care of himself from a financial standpoint.

Case 2 is that of an individual who complained of cardiac pain, dyspnea on slight exertion and cardiac irregularity. Physical examination revealed some arrhythmia, the exact nature of which was not known. On taking the electrocardiogram, it was found that he had frequent premature contractions with extra

systoles. Now any disturbance in the normal rhythm, especially where you have a combination of premature contraction with extra systoles indicates definite derangement, either in the neurogenic system of the heart or the myocardium itself. He was instructed as to his physical limitations and also in the use of quinidine and strychnine. After the administration of approximately three grains of quinidine four times a day, and strychnine grain 1/30 four times a day, for a period of one week, the cardiac rhythm was returned to normal. This was checked frequently by electrocardiogram tracings. He would go on for periods of four or five weeks with an absolutely normal rhythm without taking any medication. Whenever he felt that the heart was beginning to beat irregularly, he would again take these two drugs in the doses as mentioned, with re-establishment of the normal rhythm. As a result, this individual has been able to carry on and do his normal work without any further cardiac damage or discomfort.

Case 3 is that of an individual about 38 years of age, who complained of dyspnea on exertion, of slight cough and of tiring easily. Physical examination was absolutely normal; there was no indication of disease. When the electrocardiogram was taken it revealed a definite intra-ventricular block, which indicated severe myocardial damage. This individual was instructed as to her physical limitations, and as a result is able to carry on her normal occupation.

Case 4, a man aged 45, complained of pain over the precordium, shortness of breath on exertion, occasional palpitation and a sensation as though the heart were going to stop. Careful physical examination in this case revealed slight obesity; otherwise physical condition was considered good. Extensive laboratory examinations, including x-ray of the heart, were taken without any apparent pathological changes found to explain the complaints. Electrocardiogram taken revealed definite coronary waves in the electrocardiogram. This illustrates again the value of the electrocardiogram. Without the electrocardiogram a diagnosis of coronary disease could not have been made in this particular case.

Case 5, an adult male, aged 48, rather obese, complained of severe gastric distress at times, with nausea and vomiting, and the vomitus usually contained bile. He had been to many clinics and a diagnosis of gall-bladder disease was made. He was operated on for gall-bladder disease, and gall-bladder removed, and even after the removal of the gall-bladder, the symptoms complained of still persisted. Physical examination of this case was essentially negative. There was no evidence of cardiovascular disease elicited. Electrocardiogram taken revealed, however, severe coronary disease with indication of an old cardiac infarct. This patient was instructed in his proper care as to his physical limitations, and he was given medication consisting of theocalcin, small doses of pheno-barbital and small doses of iodides. These drugs, as we know, tend to promote increased circulation of the heart by causing some dilatation of the coronary circulation. While taking these drugs the patient was perfectly comfortable. The dosage was increased as indicated by the aggrava-

tion of his symptoms. We always must keep in mind the relationship of the gastrointestinal system to the heart; that is, they are both supplied by the parasympathetic nervous system, through the vagus nerve. Any disturbance of the heart may be referred to the gastrointestinal system and vice versa.

Case 6 is that of an individual 42 years of age, referred for treatment of acute abdominal condition. Complained of severe pain in the abdomen. There was marked rigidity of upper abdomen but the temperature was normal and the white blood count and differential were normal. Physical examination of the cardiovascular system revealed arteriosclerosis of a moderate degree, hypertension of a moderate to a severe degree. X-Ray of the heart was essentially negative. Electrocardiogram revealed coronary disease with cardiac infarct. A diagnosis of coronary thrombosis was made, patient was put to bed and given the indicated medication, and there was a general resolution of the thrombus with the establishment of collateral circulation and the individual felt well. Several months later he again had a similar attack, same procedure was utilized, but the patient died. Postmortem examination revealed coronary sclerosis and an old infarct of the anterior wall of the left ventricle, with a fresh thrombus in one of the coronary arteries at a higher site with extensive infarction.

Case 7 is that of an individual 48 years of age, referred for treatment of tachycardia. Complained of rapid heart beat, which occurred periodically during which time he felt short of breath, easily fatigued, dizzy and would have severe pain over the heart. Also noticed pain in epigastrium and stated that the heart would beat fast if he became nervous or excited. Physical examination revealed an adult white male, fairly well developed, somewhat undernourished, was nervous and apprehensive. When examined his pulse was found to be of normal rate, blood pressure slightly elevated, he had a diastolic murmur over the apex, heart tones were of fair quality and intensity. Electrocardiogram taken revealed normal rhythm and myocardial damage of a moderate degree. The following day he complained of tachycardia, heart rate was found to be 240, blood pressure was elevated, patient was rather shaky, and nervous. Electrocardiogram taken revealed, in addition to the findings of the previous electrocardiogram, marked tachycardia. Heart rate was 240. Diagnosis of paroxysmal tachycardia was made. He was placed on quinidine grains three, four times a day. There was some re-establishment of the normal rhythm, but this was not of a permanent nature. He was not able to carry on his normal occupation because if he became nervous and excited the paroxysmal tachycardia would return. He was then given injections of mechoyl three to four times a month in conjunction with the quinidine therapy. With this medication the normal rhythm was maintained. He was thus able to return to his normal occupation which was rather light in character, but nevertheless he led a useful life and was able to rehabilitate himself and avoid cardiac invalidism, which probably would have occurred if the rhythm had not been re-established.

Case 8 is that of a white adult male, aged 52, admit-

ted to hospital with a diagnosis of angina pectoris. Complained of severe substernal pain which radiated to left shoulder and down left arm. Pain would last for one hour at a time; he would become cold and have profuse perspiration during attacks. Heart would beat rapidly and he had marked dyspnea on exertion. Would become nervous, restless and apprehensive. Physical examination during an attack revealed dyspnea, tachycardia and profuse perspiration. Temperature was subnormal. Blood pressure was slightly below normal. Heart tones were weak and distant. No pericardial rub or murmur elicited. Blood count revealed a slight polymorphonuclear leukocytosis. X-ray of heart was within normal limits. Electrocardiogram revealed Pardee T-waves and low voltage of the QRS complex, and a diagnosis of coronary occlusion was made.

Case 9 was that of a white adult male, aged 48, admitted with a diagnosis of coronary disease and myocardial damage. Patient stated that he had heart trouble for three years and that he had been taking a green liquid medicine (tincture digitalis) five drops three times a day for the past three years. He complained of pain over heart lasting for hours at a time, dyspnea on exertion, epigastric distress, fullness in stomach after eating, pressure in upper abdomen and gaseous distention. These symptoms were more marked if he became nervous or excited. On detailed questioning he admitted that all his complaints began following an adverse business deal. Physical examination revealed a tall, thin, somewhat undernourished individual, who was nervous and apprehensive. Complete cardiovascular examination, including electrocardiogram, was negative for cardiovascular disease. G. I. Series was essentially negative, except for marked ptosis of the stomach. He was convinced that he had no cardiovascular disease. He was placed on a high caloric diet, given large doses of vitamin B-1 and advised to wear an abdominal belt. He gained forty pounds in weight in six months and was able to return to his normal occupation as stock broker.

Case 10 is that of a white adult male aged 40, admitted with a diagnosis of valvular heart disease and myocardial damage. History of heart trouble dating back to service in world war. Complained of shortness of breath on exertion, palpitation, dizziness on change of posture, occasional fainting spells, fatigue, weakness, precordial discomfort and aching over heart. Stated he had been taking tincture digitalis five drops two times a day for years. Physical examination revealed a small, thin, poorly nourished, nervous, emotional and irritable individual. He perspired freely during the examination and his feet and hands felt cold to touch. Respiration was rapid when discussing his condition, but they were within normal limits when his attention was diverted from his physical ailment. Observed during sleep respiration was normal. Heart was essentially within normal limits, except for moderate tachycardia. He was exercised and pulse rate increased to 160, blood pressure—systolic, elevated; diastolic elevated only slightly. Respiration increased. There was a diffuse cardiac impulse noted, and a soft systolic murmur was heard at apex. These apparent abnormal signs remained for fifteen minutes after the patient had been allowed to

rest. X-ray of heart and electrocardiogram were within normal limits. Diagnosis of neuro-circulatory asthenia was made. He was convinced that he had nothing seriously wrong with his heart. Digitalis was discontinued. He was advised to take graduated exercise, gradually increasing in degree, but at no time exceeding his endurance. His diet was high in caloric and vitamin value. He responded well to treatment and was able to return to his normal occupation.

DISCUSSION: I think I have illustrated a sufficient number of cases to point out the importance of the electrocardiogram. I have not gone into detail in giving the therapeutic and pharmacological action of the various drugs used, but we do know that certain drugs are more or less abused in their use. Digitalis is given in most cases in which cardiac disease is suspected. In many cases the doses are so small as to produce no therapeutic effect. In other cases digitalis is absolutely not indicated. Digitalis finds its use only in cases in which there is definite cardiac damage of such degree as to present definite symptoms of cardiac decompensation. Digitalis itself has no place in the well-compensated heart. It does have a great deal of value in the decompensated heart, or in cases in which decompensation is eminent or impending.

The electrocardiogram also has an important place in the differential diagnoses of the various heart conditions. It surely gives definite evidence of any disturbance in the normal cardiac rhythm. It also gives definite evidence of any damage to the heart muscle itself or to the neurogenic system supplying the heart.

Electrocardiograms in some cases reveal beginning myocardial derangement or disturbance of the heart conduction or vascular system long before the actual disturbance of the heart conduction or vascular system is elicited by any other method. It is important in the differential diagnosis between angina pectoris and coronary occlusion. It is true that there are some physical symptoms of differentiation in both of these conditions but the electrocardiogram may give definite evidence of differentiation. In cases of angina pectoris, in most cases the electrocardiogram is normal, whereas in cases of coronary occlusion it is often useful and very characteristic. As we know angina pectoris is more or less of a syndrome, which indicates spasms of the coronary arteries, whereas coronary occlusion indicates definite coronary disease with blocking of one of the coronary arteries. De-

pending on the extent of the involvement of the artery, and the area supplied, recovery can be based.

CONCLUSION: The electrocardiogram is of definite importance in the diagnosis of cardiovascular diseases. There is no other adjunct known today which can take its place, especially in diagnosing conditions which are not apparent or manifested by physical examination or by x-ray of the heart. It is important to keep in mind at all times the position of the individual at the time the examination or electrocardiogram is taken, as variations in position may reveal some change in the electrocardiogram.

It is also important to know what medication the patient has been on before the electrocardiogram is taken, as many drugs will alter the electrocardiogram to such degree as to create a false impression as to the possible cardiovascular disease present.

This paper illustrates the importance of the routine electrocardiogram in cases in which there are no apparent symptoms either subjective or objective referable to the heart, as many cases reveal severe cardiac damage which is later confirmed by physical findings, which are late in their manifestation, or by autopsy. It is also important in determining the prognosis in certain cardiac diseases, as well as to rule out the diagnosis of non-existing disease of the myoneurogenic system of the heart.

FOOTNOTE: Presented with the permission of the Medical Director of the Veterans' Administration, who assumes no responsibility for the opinions expressed or the conclusions drawn by the author.

DISCUSSION

Dr. George Parker, Peoria: The electrocardiograph is now a well-established adjunct in the diagnosis of cardiovascular disease. Its chief value lies in its power to differentiate the various types of disturbed cardiac rhythm, to detect disease of the heart muscle or of its neurogenic system, and to diagnose coronary thrombosis.

Dr. Berardi's paper affords some very illuminating data on the percentage of cardiac or suspected cardiac patients in whom we may expect to obtain additional diagnostic information by the routine use of the electrocardiograph. He has shown that in a group of patients presenting both symptoms and physical findings of cardiac disease, the electrocardiograms were abnormal in 90%. In another group presenting no symptoms of cardiovascular disease but with physical findings suggestive of cardiac damage there were 85% abnormal electrocardiograms. I have been impressed by the number of patients presenting complaints referable to the gastrointestinal system but with few or no physical findings of cardiac disease who have abnormal

electrocardiograms and whose subsequent courses prove that in reality their symptoms are cardiac in origin. Insurance companies require an electrocardiogram of the 50-year-old applicant for life insurance if he has symptoms of indigestion. Dr. Berardi has shown that a group of patients with cardiovascular symptoms but without physical findings of heart disease had 50% abnormal electrocardiograms.

Combining all three groups of definite cardiac or suspected cardiac patients, he finds the electrocardiograms positive in about 80% of the cases. Any laboratory procedure which offers such a high percentage of additional diagnostic data is worthy of being included in the routine examination of patients of this type for the purpose of making more accurate diagnoses.

The percentage of abnormal electrocardiograms obtained in such a series of cases undoubtedly would vary considerably with another individual's group of cases. Dr. Berardi's high percentage might be interpreted as a compliment to his diagnostic ability or to his acuity in electrocardiographic interpretation.

Often negative electrocardiographic findings are as valuable or even more so than positive findings. Cardiac disease may be ruled out as well as in. For example, in cases where the diagnosis rests between a coronary thrombosis and an acute upper abdominal emergency, the electrocardiogram will throw the differentiating light upon the situation accordingly as the findings are positive or negative.

For those experienced in differentiating the various types of abnormal cardiac rhythm, the electrocardiogram may not be so essential; but for the novice or the one less experienced it provides accurate proof of the diagnosis of the disturbed rhythm.

Dr. Berardi's comprehensive study has shown the value of the routine electrocardiogram in cardiac or suspected cardiac patients.

Dr. N. S. Davis, III, Chicago: I have been very much interested in this paper. I think Dr. Berardi has shown the importance of the electrocardiogram as a diagnostic instrument. However, I feel that it is important to emphasize two or three things. We have many patients whose electrocardiograms show some pathological conditions but who have no symptoms or history pertaining to cardiac disease. Those patients should perhaps be informed that they have certain changes in the electrocardiogram but that unless they develop symptoms of some sort the fact that they have these changes is no more important than the presence of a murmur in the absence of other evidence of heart disease.

It is not always easy, in fact I hesitate ever to make a positive anatomical diagnosis of coronary disease or cardiac infarction from the electrocardiogram alone. Many times such a diagnosis is not justifiable because the history, the physical examination and often the postmortem indicate the lesion diagnosed is not present. We should not do more than say that the curves are consistent with a diagnosis of certain kinds of diseased conditions. We cannot make a positive diagnosis except of arrhythmias from the electrocardiogram alone.

You must remember that the patient must have symptoms as well as some abnormal findings before treat-

ment is necessary. The man who makes the electrocardiogram cannot make a certain diagnosis and should not advise treatment unless he has also examined the patient.

James B. Berardi, closing discussion:

In reference to remarks made by Dr. George Parker concerning the variations of abnormal electrocardiograms in different individual groups, I wish to state that the group I presented represents adults all over 37 years of age, and that the oldest of the group was 94 years. These patients were referred to the hospital by their private physicians because of suspected pathology or the patient presented himself because of certain manifestations of poor health.

In answer to Dr. H. S. Davis, I desire to state that in the group I have presented, I have not only read the electrocardiograms, but examined the patients as well. It is true that the man who has read the electrocardiograms alone can not make a definite diagnosis, but when the physician who has examined the patient is himself familiar with the abnormalities of electrocardiography, he can properly confirm the history and physical findings or question them.

It is not always advisable to wait for symptoms to present themselves before treatment is instituted, because if the delay is too long serious irreparable damage may be caused to the cardio vascular system.

ETIOLOGIC AND THERAPEUTIC FACTORS INVOLVED IN CHRONIC BLEPHAROCONJUNCTIVITIS

N. K. LAZAR, M. D.

CHICAGO

Everyone is well acquainted with the problem which I am to present at this meeting, yet I believe that in everyday practice it is one of the least solved problems. With this in mind, it occurred to me that fungi may have something to do with this condition because we all know that zinc in almost any form inhibits the growth of fungi. Accordingly, I investigated a number of cases from this angle and am sorry to report that the findings were negative. I will say more about this later.

Before proceeding any further I think it is well to define the condition I want to discuss. All of us have seen patients with complaints of asthenopia together with marginal involvement; some scaling, some redness at the lid margins. Some have used glasses without any apparent relief. Others have no asthenopia; no refractive

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error, but redness of the lid borders with marked discomfort for near. In some the scaling approaches the ulcerative type with loss of hair follicles. In nearly all cases smears are negative for organisms. This is the type of blepharoconjunctivitis with which my paper deals. There are a number of cases of chronic conjunctivitis which are also included in this survey.

The literature on this subject is so voluminous that no attempt will be made to quote it completely. Here and there a few pertinent remarks will suffice to show how involved this problem is. From an etiologic standpoint Axenfeld¹, Collins and Mayou² and others³ have found the gram-negative diplobacillus of Morax-Axenfeld to be responsible for this condition. McKee⁴ has shown that the normal conjunctiva harbors many pathogenic organisms and many of these may become activated and produce the type of blepharoconjunctivitis or chronic conjunctivitis with which this paper is concerned. Hansell⁵, Taub⁶ and Lehrfeld⁷ report cases of chronic conjunctivitis and blepharoconjunctivitis which are due to some specific allergy. Taub reports a case in which silk caused a moderate blepharoconjunctivitis, and when the patient was desensitized to it the conjunctivitis disappeared. Hollander and Baer have pointed out the importance of a careful allergic history.

It is quite common to see cases of blepharoconjunctivitis caused by dandruff. Von Studdelford⁸ reported several cases as due to seborrhea. In discussing this paper Kile stated that he believes that he has discovered the organism which is responsible for seborrheic blepharoconjunctivitis. He named it the pityrosporum ovalis. This has not been confirmed.

Muende⁹ reports a case of generalized trycho-phytids with complicating blepharoconjunctivitis and believes this to be an allergic manifestation.

Several French authors report cases of chronic blepharoconjunctivitis as being due to mycelian concretions of the lacrimal ducts. More recently Thygeson¹⁰ and O'Brien and Allen have shown that many of these cases may be due to staphylococcus hemolyticus. The chronicity and the recurrence of the condition in certain individuals, together with positive cultures seems quite conclusive. Mariconi¹¹ has shown that when two or three drops of a staphylococcus filtrate are dropped into the conjunctival sac of cases with staphylococcus infection the conjunctiva becomes

hyperemic and remains so for several days. One should mention the blepharoconjunctivitis due to overmedication. The best proof of the cause, of course, is the rapid disappearance of the disease when the noxious drug is removed. An excellent classification of chronic blepharoconjunctivitis was given by Gradle¹² in 1930.

The literature on treatment of this condition is as numerous as the number of cases reported. Gradle¹² has pointed out the importance of long persistent treatment. He believes that ung. novoform in 1% or 2% seems to give excellent results. Gifford¹³ has pointed out the importance of evacuating the meibomian glands. A. Peters¹⁴ believes that no medicament has a specific action on the disease. Ronne points out the importance of removing all scales before rubbing in the ointment. He doesn't believe it makes a great deal of difference what ointment you use. There is a difference of opinion however and Gifford has shown this to be true in many cases.

Medvedeff and Euffa¹⁵ use a 1% solution of brilliant green in 50% alcohol—painted on the margins of the lids. They report fair results in fifteen cases. Many cases required four and five applications. The author has seen several patients treated with brilliant green, both at the County Hospital and at the Northwestern University Eye Clinic with little or no benefit. Tulipan¹⁶ reports good results with brilliant green in cases of chronic blepharoconjunctivitis due to sycosis vulgaris. Gifford has shown that many of these patients are helped by x-Ray therapy, giving $\frac{1}{8}$ to $\frac{1}{5}$ of an erythema dose for three doses or more ten days apart. Clark¹⁷, in his excellent paper, has shown that persistent and methodical treatment is necessary in achieving a satisfactory result.

All cases herein reported were subjected to a rigid and complete ophthalmologic examination. Homatropine refraction was done in all cases, muscle balance tests before and after refraction, and all cases of chronic conjunctivitis and mild cases of blepharoconjunctivitis in which refractive error or muscle imbalance was thought to be part of or influencing the complaint are not included in this series. Although it is true that a large percentage of the patients were wearing glasses, these had no bearing on the etiologic or therapeutic factors involved.

Conjunctival scrapings were prepared and a

gram and giemsa stain made in all cases (see Chart 1). Conjunctival scrapings, in most of the cases, with a gram or giemsa stain were either negative or the staphylococcus albus or aureus was found. All cases were cultured

An agar slant and broth culture was made in all cases. Of the forty-eight cases herein reported only seven showed positive growth and these showed pure cultures of staphylococcus aureus or albus. In about half of the forty-eight

TABLE I

Date	Case No.	Type	Gram	Giemsa	Fungi	Broth and Agar Culture	Treatment
6/11/36	1	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
6/18/36	2	Bleph-Conj.	No org.	No org.	No growth	Pure Staph. Aureus	Routine
6/25/36	3	Chronic Conj.	Mixed	Mixed	No growth	Pure Staph. Aureus	Vaccine*
7/16/36	4	Chronic Conj.	No org.	No org.	No growth	Neg.	Routine
7/30/36	5	Chronic Conj.	No org.	No org.	No growth	Neg.	Routine
8/ 7/36	6	Bleph	No org.	No org.	No growth	Staph. Aur.	Vaccine
8/13/36	7	Bleph-Conj.	No org.	No org.	No growth	Staph. Albus	Routine
9/13/36	8	Bleph-Conj.	Mixed	Mixed	No growth	No growth	Routine
9/10/36	9	Bleph-Conj.	No org.	No org.	No growth	Staph. Albus	Routine
9/24/36	10	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
10/ 2/36	11	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
10/ 7/36	12	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
10/22/36	13	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
10/ 7/36	14	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine and X-Ray*
10/22/36	15	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
12/24/36	16	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
12/28/36	17	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
1/16/37	18	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
1/27/37	19	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
5/ 2/37	20	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
12/ 4/37	21	Bleph-Conj.	No org.	No org.	No growth	Staph. Aur.	Vaccine and X-Ray*
2/21/35	22	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
5/13/37	23	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
7/ 1/36	24	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine (Dandruff)
7/ 3/37	25	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
8/16/37	26	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
8/26/35	27	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine (Hay Fever)
10/14/37	28	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
4/13/32	29	Chronic Conj.	No org.	No org.	No growth	No growth	Routine
6/10/33	30	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
3/ 5/34	31	Chronic Conj.	No org.	No org.	No growth	No growth	Routine
7/30/35	32	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
1/14/35	33	Chronic Conj.	No org.	No org.	No growth	No growth	Routine
6/21/35	34	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
7/18/36	35	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine and X-Ray
4/ 6/36	36	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
4/28/36	37	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
9/23/36	38	Bleph-Conj.	No org.	No org.	No growth	Staph. Aur.	Routine
1/27/37	39	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine and X-Ray and Vaccine
9/27/37	40	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine and X-Ray
2/16/37	41	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine and X-Ray
7/ 2/37	42	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
4/ 3/37	43	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
9/29/37	44	Chronic Conj.	No org.	No org.	No growth	No growth	Routine
8/19/37	45	Chronic Conj.	No org.	No org.	No growth	No growth	Routine
5/20/37	46	Bleph-Conj.	Morax-Ax.	Same	No growth	Not done	Zinc
1/ 2/37	47	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine
2/18/38	48	Bleph-Conj.	No org.	No org.	No growth	No growth	Routine—Cleared

for fungi: the media employed was that recommended by Fisher and Arnold¹⁸. Several such media were considered, but this media was selected for it produces a minimum growth of bacteria. These cultures were examined after twenty-four, forty-eight and seventy-two hours with no growth observed in any case.

cases cultures on blood agar were made and in none of these was staphylococcus hemolyticus found. Of the seven positive cultures, four were re-examined and another culture on agar and broth made. These showed the same organism as the first culture. The negative culture findings in such a large number of cases may

have been due to the use of the plain broth or agar. An autogenous vaccine was made in two cases and vaccine was given in graded doses over a shorter or longer period. In all of these cases medication was either discontinued or the patient had no treatment of the eyes for a week or better prior to injection of the vaccine.

The treatment in all cases was somewhat standardized. Cases 25, 26, and 46 were treated according to the etiology. Case 46 cleared up completely after ten days of treatment with 2% zinc sulphate solution, one drop into the conjunctival sac washed out with a solution of 1/5% zinc sulphate every other day. For home use 1/4 per cent. zinc sulphate solution three times daily was prescribed followed by heat—wet or dry—for ten minutes each time. The patient was asked to use a 1/4% zinc ointment in lanolin before retiring. The blepharoconjunctivitis disappeared in about ten days. Cases 25 and 26 were given Suker's eye-wash to be used twice daily, together with novoform ointment 1% to be used before retiring. Once a day the lid margins were gently scrubbed with a pledget of cotton dipped in boric solution to remove the flakes. The patient was then referred to a dermatologist for treatment of the underlying seborrhea.

For the remaining cases the routine treatment was as follows: After smears and cultures were found to be negative in cases of blepharoconjunctivitis 2% solution of butyn was used for anesthesia. A toothpick applicator dipped in 1/2% silver nitrate was then gently rubbed into the lash border so as to loosen the scales and at the same time to apply the antiseptic. The meibomian glands were then squeezed out and secretions wiped away. Ung. novoform 1 or 2% was then rubbed into the lid margins and the excess wiped away. This was followed by a drop of adrenalin 1:1000 in each eye and a cold towel applied for about five minutes. This procedure in the office was repeated about once a week. For home use a solution of 1/5% zinc sulphate, one drop three times a day, was dropped into each eye to be followed by hot towels for from five to ten minutes about twice a day. Ung. novoform 1% was put into the conjunctival sac before retiring. After two weeks of the above treatments, if no marked improvement was shown, some of the cases were given small doses of x-ray to the eye—1/5 to 1/4 erythema dose to each eye

once every ten days for four times, the eyes being protected by a mercury shield. Of the forty-eight cases, six were given this treatment with marked benefit after the third dose. Case 39 had all the routine treatment over a period of four weeks, with a change in antiseptic twice, together with four x-ray treatments, with only some improvement. Culture taken again after six weeks from onset showed a staphylococcus aureus in pure culture. An autogenous vaccine was made and graded doses, starting with 1/10 c.c. of 5,000,000 to 5 c.c. were given once a week. This patient cleared up completely after five weeks of injection. There has been no recurrence of the blepharoconjunctivitis for at least six months. The remaining five patients with positive cultures, showed some degree of improvement after injections of an autogenous vaccine, but not sufficient to clear the lids of the disease.

However, the remaining five patients with blepharoconjunctivitis that received x-ray treatment all improved so that they did not require any more treatment.

The remaining patients in whom routine treatment of removing scales, squeezing out the contents of the meibomian glands through the lid margin, applying an antiseptic and using an ointment once or twice daily to the lids, did not show a tremendous amount of improvement. True they were helped considerably, so that from a cosmetic standpoint they had improved, but as soon as the treatment was discontinued the condition recurred. It was never, however, as bad as when they first presented themselves.

TABLE 2

Number of cases.....	48
Number with known etiology.....	5
1 Morax-Axenfeld bacilli	
2 Hay fever	
2 Seborrhea	
Number of positive cultures.....	7
5 Staphylococcus aureus	
2 Staphylococcus albus	

TABLE 3

Number of cases treated.....	48
Number responding to x-ray.....	6
Number responding to vaccine.....	2
Number responding to specific etiology.....	3
(1 morax; 2 dandruff)	
Number helped	37
Number cured	11

Cases of chronic conjunctivitis seemed to respond less to any type of treatment than the cases of blepharoconjunctivitis. Of the eight

cases herein reported, three seemed to improve after the removal of calculi from the conjunctiva. In these cases, one per cent. and sometimes 2% silver nitrate was used with some relief of the symptoms. One of these cases had a pure culture of *staphylococcus aureus*. This patient was given autogenous vaccine without a great deal of benefit.

COMMENT

1. Report of a bacteriological survey of forty-eight cases of chronic blepharoconjunctivitis is made.

2. The great preponderance of cases show no organism on scraping or culture.

3. Persistent treatment is necessary and no specific treatment was employed.

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DISCUSSION

Dr. Elias Selinger, Chicago: Any attempt to deal with the problem of chronic blepharoconjunctivitis from a scientific standpoint deserves to be commended. The consideration of the role of fungi in the etiology of blepharoconjunctivitis is very interesting and at the same time is beset by many difficulties. Fungi have extremely varied morphological, biochemical and immunological characteristics. Because of the great complexity of the organisms there is as yet no uniformity in the classification of fungi. Some authorities consider molds (eumycetes) and yeasts as a separate group from true fungi, while others again place actinomycetes and related organisms such as the tubercle bacillus into a special group of actinomycetaceae: still others group all these together under the general head of fungi. In this discussion molds, yeasts and some of the actinomycetaceae will be considered under the general term of fungi.

Fungi are extremely numerous and widely distributed in nature. They are found on damp walls and floors, on and in the soil, on plants and minerals, in the water and in the air. The spores of molds are usually more

abundant in the air than bacteria. In laboratories culture media are readily contaminated by molds; preserved fruit, vegetables and other products often become contaminated by them. Fungi play an important role in the production of sake, beer and other alcoholic liquors as well as in the baking of bread. Many are parasitic upon higher plants. *Phytophthora infestans* causes potato rot, while another fungus, *claviceps purpurea*, by infecting rye and other grains, causes ergotism if the infected grain is eaten. A relatively smaller number of fungi are pathogenic to higher animals, including man. Plaut has divided the fungi pathogenic to man into three groups: (1) molds in the narrower sense, such as *mucor mucedo* and *aspergillus*; (2) fungus of thrush; (3) fungi infecting the skin. This last group is very large. *Aspergillus* infections are quite common. Most of the reported lung infections have been found among bird fanciers, especially those dealing with pigeons. *Monilia albicans* produces thrush, while another member of the monilia group, *m. psilosis*, is found in sprue. Both these, as well as the *achorion schoenleinii* which cause favus (a contagious disease of the scalp) and *trichophyton* (which causes ringworm) have been found on the lids and in the conjunctiva.

Fazakas, in a recent article, reported the isolation of forty-two varieties of fungi from the eye. Among 1335 diseased eyes examined he found 495, or 37% were positive, while among 456 healthy eyes 117, or 25% were positive for fungi. In three cases of mycosis of the lid margins fungi were found. Of 57 positive cases in blepharitis there were 22 penicillium, 9 torula, 4 alternaria, 3 cryptococcus, and 3 schizosaccharomyces hominis of Benedek. Among 27 positive cases of blepharoconjunctivitis, penicillium was found nine times, torula four times, and Benedek's schizosaccharomyces hominis four times. Fungi were found in 41 cases of acute, 48 cases of subacute, and 18 cases of chronic catarrhal conjunctivitis; fungi were also cultivated from 50 trachoma cases. Cultures were also positive in follicular, angular, vernal, eczematous, inclusion, croupous and gonorrheal conjunctivitis. Chalazion, hordeolum, meibomitis and infection of the tear passages were other sources of positive cultures.

Duke-Elder in his textbook mentions *leptothrix*, *rhinosporidium*, *blastomyces* (monilia), *sporothrix* and other fungi isolated from the conjunctiva in cases of conjunctivitis caused by fungus infection.

Of course, the mere presence of these organisms on the lid or in the conjunctiva does not signify that they are pathogenic. Nor does the absence of fungi in cultures necessarily indicate that they are not present in or on the tissues. Their cultivation in artificial media may be a very complex process and may require the assistance of a trained mycologist who can devote a great deal of time to this study.

So far as treatment of fungus infections is concerned the problem is by no means a simple one. Some fungi can be killed very easily by various fungicides in the test tube, while on the tissues they are very resistant. Thus, some infections can be cleared up by the application of zinc sulphate, tannic acid, silver nitrate and other chemicals, while a *streptothrix* infection of the canaliculus, for instance, requires removal of the con-

cretions by curettage. Leptothrix infection may respond to surgical removal of the involved necrotic areas while blastomycosis may be beneficially influenced by iodides internally. X-ray has a beneficial effect on some fungus infections. In some cases the fungus, although not responsible for the infection, complicates the clinical picture by producing a tissue reaction or local sensitivity to the presence of allergens from the fungus growth. In these cases the manifestations of the reaction to these allergens must be cleared up before the underlying true cause of the disease can be successfully treated.

Dr. N. K. Lazar, Chicago (closing): One really ought not to show such a small series of cases. You would need a large number before you could say you had positive cures. I think one reason we got negative cultures for fungi was because, as Dr. Salinger mentioned, a lot of people came in with a tremendous amount of treatment over a long period of time, and how long one can let an eyelid go before culture, and get a positive culture, I do not know. It is very hard to get a medium that is acceptable from every standpoint. It is nearly impossible to get a culture medium that is so ideal that you can exclude all other organisms and at the same time obtain a good fungus culture.

VENEREAL DISEASE CONTROL

G. G. TAYLOR, M. D.

CHICAGO

Venereal disease control, in Illinois, dates officially from the promulgation of Rules and Regulations by the State Department of Public Health in 1917.

Examination of men drafted for military duty had shown the great prevalence of venereal diseases and their end results. The government took notice. Congress appropriated three million dollars for distribution among the states, according to population. The states put up an equal amount. A campaign including educational, repressive, and treatment measures was inaugurated, and an aggressive fight was carried on for a few years.

The war being over, people complained of taxes; congress failed to re-appropriate; gradually state legislatures lost interest; educational work ceased, and only a few clinics remained. The public, which had learned to hear the words syphilis and gonorrhea without a shudder, soon recovered its embarrassment at the mention of them. Less than five years ago a Chicago physician, after listening to a paper on the treatment of gonorrhea and some discussion which fol-

lowed, arose and said, "Enough of this, let's discuss something decent."

Meanwhile, syphilis and gonorrhea, chancre and in later years granuloma venereum were steadily taking their toll.

Gonorrhea was responsible for innumerable surgical operations on females, and Chicago alone was sending several hundred syphilis patients to state hospitals for the insane every year. The care of these insane patients cost the state more than the annual venereal disease control budget, to say nothing of human suffering of patients and the misery of their dependents.

Surgeon General Thomas Parran was installed as head of the U. S. Public Health Service after many years spent in practical public health work throughout the country. As a result of this experience, he had come to realize, and so boldly announced to the public that venereal diseases and particularly syphilis constituted the most outstanding public health problem of the day.

After two years of remarkable publicity, in which practically every newspaper and magazine in the country has had a part, the public is well informed concerning syphilis and is demanding that it be controlled.

The Chicago Syphilis Survey, conducted during the spring of 1937, by the U. S. Public Health Service, in cooperation with the State Department of Public Health, the Chicago Board of Health, the Illinois State and Chicago Medical Societies, has been productive of much useful information and food for thought. Without lengthy detail, certain findings are of interest.

Of 19,000 cases under treatment during the survey period, it was learned that diagnoses were made and treatment begun in the following stages:

Latent 54%; early (under two years) 15%; tabes 6%; late prenatal 6%; cardiovascular 5%; asymptomatic-neuro 3%; paresis 3%; other neurosyphilis 3%; benign late 3%; early prenatal 1%; other late cases 1%.

The foregoing is not necessarily an indictment of our diagnostic ability or lack of it, but it should certainly awaken us to a realization of the terrible cost of carelessness, indifference, inertia, ignorance or what not. We have failed to diagnose our cases until 85% of them had passed the stage in which a cure is possible.

The birth rate has been falling, syphilitic

mothers have had many miscarriages, and have borne many syphilitic babies.

The detection of syphilis in the very early stages is of great importance in that the possibility of cure is much greater if treatment is begun then, than when the disease has progressed to the latent or late stage before treatment has been instituted.

From a public health point of view, it is equally important that the patient under treatment receive the minimum amount of therapy recommended by the Cooperative Clinical Group, viz., twenty injections of an arsenical and twenty injections of a heavy metal, if infectious relapse is to be avoided.

The survey showed that whereas 23% of patients under treatment by private physicians continued a sufficient length of time to receive the required minimum therapy, the clinics succeeded in holding 52%. The natural inference is that clinics make better use of the Board of Health machinery for returning lapsed patients to treatment agencies, than do physicians.

The cooperation of private physicians is essential to the success of venereal disease control. This was recognized in the very beginning, and the desire to make venereal disease control beneficial to the physician is responsible for Rule 4, which permits the physician to report the patient under a key number, without revealing his identity. If Rules 3 and 4 are explained to the patient in the beginning when he should be made to understand the nature of his disease, and the necessity for prolonged treatment, his compliance will be more easily secured.

He should be made to understand that if he assists in locating the source of infection, or in bringing such source and other exposed persons in for examination, and continues under treatment until no longer a menace to others, then the health officers have no concern as to his identity. The examination of such persons often results in other patients for the reporting physician.

The wise physician continues to instruct and educate his patient as treatment progresses. Also, he explains to the patient that a negative blood result in the first year is no indication for a cessation of treatment. No rest period should be given during the first year of treatment, because a rest period lessens the possibility of ultimate cure, and since he feels better without treat-

ment, creates in the patient a feeling that he has had enough medication.

Failure to properly educate the patient is undoubtedly the reason the average patient received only 12 injections of an arsenical with an equal number of a heavy metal during the first two years of treatment and observation.

It has been suggested that the physician who is interested in the treatment of venereal diseases will consider the patient's ability to pay and regulate his fee accordingly. He will consider the practicability of designating certain hours, preferably in the evening, for operating his own clinic.

Patients unable to pay his regular treatment charge will gladly avail themselves of an opportunity to go to Dr. Doe's private clinic, where he has the personal attention of the doctor or his assistant instead of the public clinic with its crowd of patients. With free drugs, free laboratory and follow-up service it becomes possible to treat patients at a nominal charge and still make such hours very profitable. In this manner the wise physician retains his patient's good will, provides the best treatment and permits the patient to retain his self-respect.

The government survey has shown that ten per cent of pregnancies among syphilitic women result in still births, as compared with two per cent of pregnancies among non-syphilitic women. Routine blood tests must be made on pregnant women if prenatal syphilis is to be prevented.

The Saltiel amendment to the marriage license law, which became effective July 1, 1937, has already demonstrated its worth in venereal disease control. It is not claimed that the law is perfect and Representative Saltiel has invited suggestions from physicians for improving and strengthening it.

Health departments may well be proud of their accomplishments in the control of other communicable diseases. Prevention of the spread of communicable disease is their most important function.

Venereal disease control has come to stay. We willingly report small-pox and scarlet-fever—why not syphilis?

Reporting venereal disease pays in dollars and cents. Shall we do it willingly or shall we wait for the law to show its teeth?

518 Deming Place.

DISCUSSION

Dr. John J. McShane, Springfield. I wish to congratulate the speakers who have presented papers on venereal disease control. In discussing Dr. Taylor's paper, I wish to state that Chicago's problems are very much like those down state and one of our biggest problems is in getting the early cases under treatment, for statistics have shown that fifty per cent. of the cases are not seen by a doctor until a year has elapsed from date of initial lesion. It behooves the medical authorities and others to educate the public so that any person with a suspicious lesion will contact a physician for proper treatment instead of going to a druggist for ointment.

At the present time the department is standardizing laboratories throughout the state and we are finding some very interesting results. So that the results from all laboratories will be comparable, those laboratories approved will be furnished with standard antigen.

I have three or four slides that I would like to present showing the age groups, number of cases by counties, etc.

It is the intention of this department to check all cases of syphilis down state the same as we do smallpox, infantile paralysis, etc., so that we may learn, if possible, the source of infection and also those who may have been exposed and in this way place them under the care of their family physician for early treatment.

THE SYPHILIS CONTROL PROGRAM OF THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH

NOXON TOOMEY, M.D.

SPRINGFIELD, ILL.

Five years ago considerable restriction of our syphilis program became necessary. Eighteen months ago, retrenchments became not quite so necessary because of partial assistance by means of Social Security funds administered through the United States Public Health Service. Accordingly, an opportune return to a fuller syphilis control program was wisely planned in October 1936 by Doctors Frank J. Jirka, A. C. Baxter and John J. McShane for the State, and Doctors Parran, Vonderlehr and Wenger of the United States Public Health Service. Soon thereafter, we received assurance that our enlarged syphilis program would be cordially supported by the Council of your Society; a joint contact committee soon being organized.

Late in 1936, syphilis control measures were reviewed, revived and reorganized according to their interrelationships, and their relative merits

in a complete program. Though the program was not ranged into yearly stages, it was not supposed that all activities could be commenced at once. One of the first requirements was for enlargement of the Central Control Office, and of the Field Force *pari passu*. Now, after some nine to ten months of effective organization of thrice enlarged forces, both in the field and in the Control Office, we are ready to make more analytic surveys of local problems, and to bear directly upon local situations when invited to do so by the local medical profession. Or, as may become necessary for us to do so if community leadership in matters medical is allowed to pass from the County Medical Society. However, our program is based squarely upon the principle of assisting doctors, and of working through the medical profession.

As yet, we can report almost only on our increasing assistance to private doctors; and on our increasing dissemination of information to the lay public. *Nothing has been done by us in the way of inaugurating free clinics.* We are, however, partially assisting 33 free clinics from which we receive monthly reports. The inauguration of not one of them was however, sponsored by us, much less enforced by the State. Whereas new clinics will add to our burden of assistance and supervision, we anticipate that more communities will take it upon themselves to open venereal clinics. Without such, or a *comparable means* for reaching indigent and near indigent syphilitics, it will be utterly impossible for us to more than gloss the surface of control. Such has been the history of syphilis control in all countries in all ages.

Whatever may be the ultimate character and scope of services sponsored and organized by municipal or private groups in Illinois, we may be depended upon to continue—possibly increase—our free assistance to private doctors. Our present assistance consists of unlimited free laboratory tests on blood, spinal fluid, and chancre exudate; of free drugs for reported cases; and a contacting of lapsed cases whenever and wheresoever reasonably possible. Free laboratory service is not restricted to only doctors who report cases to us. We hope that more doctors will avail themselves of our free tests for syphilis; and, that those who are now doing so routinely on certain types of cases, especially on cases of pregnancy. To assist furtherance

of more tests for syphilis, our Division of Laboratories has enlarged its staff and has opened a new Branch Laboratory in Galesburg. Also, to improve the reliability of tests being made in private laboratories, our Acting Director has authorized a survey to be made of private laboratories which request our assistance towards a standardization of their syphilis tests. To maintain uniformity, we will supply free our standardized antigen to those private laboratories which cooperate with us.

Our free anti-syphilitic drugs have come to be depended upon by nearly 40% of downstate doctors (some 2000), and approximately as many in Chicago. We are disappointed that not more doctors avail themselves of free anti-syphilitic drugs; but we will not commit administrative errors, nor technical mistakes, just to get drugs into the hands of doctors who fail to cooperate. Therefore, we must continue to insist upon cases being first properly reported to us before drug can be supplied; and, we will have to continue to insist upon continuance of treatment being certified to monthly before drug can be sent. Neither of our *only two* requirements are the least difficult to comply with, if records are kept as they should be kept, and replies to our letters are attended to promptly.

Our policy, "Report the case, receive free drug" need not be conditioned for any case because we supply free drugs without regard to stage of case (length of duration of disease) or financial status of patient. The latter principle is quite necessary because the little distributed for cases in wealthy syphilitics is comparatively insignificant and is their due as taxpayers; whereas, the few dollars worth is vastly overshadowed by the large proportion distributed for persons who would be kept from needed treatment by either the imputation of charity or the having to pay for the drug. Therefore, it is a necessary medical measure for us to provide drugs free for any properly reported case without respect to financial status.

The policy of supplying free drugs for all stages of syphilis is desirable but not essential. Yet, we will continue to supply free drugs for use in non-infective cases even if such cases are not likely to ever become a concern of public health preventive medicine. We, as public health officers, are really only concerned in preventing the spread of syphilis; and not in curing

late non-infectious syphilis. Therefore, we wish to see less dissipation of funds that should be conserved for defraying the cost of treating infective cases and young victims of syphilis.

Control by treatment presupposes *uninterrupted* medication until infectivity becomes unlikely—a matter of many months. Most young adults lapse treatment after five or six weeks, and many seemingly sincere mature persons by the eighth or ninth week. That is why we must require monthly reports concerning continuance of treatment. It would be illogical for us to supply lengthy courses of drug; or to await reports that probably never would be made except in the small proportion of cases that continue into the fourth consecutive month of treatment.

Besides being arranged as a convenient service to doctors, our monthly drug letters provide an expeditious means for doctors to inform us of infective (and potentially infective) persons who lapse from control. When we are *sufficiently informed* of infective lapses, we certainly do endeavor to effect returns to treatment.

However perfect might be our control of lapsed infectives, such alone would not control spread because unrecognized cases must be found and gotten under treatment. Therefore, we must be informed concerning all contacts, whether sources, victims, or possible victims. It is with respect to case finding that we can and will extend the scope of our service. But, we will not be able to do so sufficiently unless doctors report better. A little over sixty per cent. of doctors endeavor to comply with the law that requires reporting of communicable diseases. However, nearly half of reporting doctors do not report sufficiently fully to do credit to a learned profession.

Case reports, as we are now receiving them, range from 5% very good to 25% not good; with the intermediate portion averaging considerably less than satisfactory.

To improve reporting—both as to quantity and as to quality—is prominently on our program, and henceforth we will be more insistent upon better and fuller reporting.

Prevention of communicable syphilis need not be concerned with about eighty per cent. of syphilitics over 56 years of age. Nevertheless, we supply free drugs for such cases. Indeed, far too large a proportion of our drugs have been requested for "treating a Wassermann reaction"

in late cases over 50 years of age. Most of such syphilitics have attained fairly satisfactory balance with their infection, their syphilis probably being not much more than saprophytic. If these old timers are treated safely (judiciously and conservatively), we do not object to supplying three-quarter to half-size doses according to age of patient. But, where funds are low it is the young people who must be given precedence because it is they who usually have infective syphilis; and it is they who can be depended upon to pass around what they have. Unfortunately, too few of this category are apprehended early enough; and when eventually located, they are seldom kept under continuous treatment long enough.

We do not blame doctors, druggist, or parents, but the harum-scarumness and irresponsibility of the youths themselves. Nevertheless, doctors should remember to look beyond treating only late cases in old ladies and mature men. Therefore, doctors are being asked to cooperate with us towards forging a network for catching infected youths early, and for holding them to adequate treatment. Unless town and county venereal control organizations are developed among doctors it may become possible that lay community leaders will become aroused to organize some free service for indigent and near-indigent syphilitics. We know that it would be best for all syphilis control activities to be in your hands and our hands jointly rather than to have such services administered chiefly by laymen.

The importance of early correct diagnosis we stress as much as treatment. Diagnosis is an integral part of our program, concerning not only our special Syphilis Section, but also our Division of Laboratories and our Division of Child Hygiene. Our Division of Child Hygiene is stressing the disastrousness of syphilis to maternal and child welfare, and is convincing every practitioner that blood tests for syphilis should be a routine part of prenatal care in *every* pregnancy. For our part, we are confident that a charge of malpractice could be established against a doctor who failed to have such tests made provided time and opportunity had permitted them to be made.

Concerning treatment plans and preferences, we leave details mostly to the judgment of the doctor treating the case. Therefore, we usually

supply drugs as requested; especially if unusual requests are supported by statement of clinical reason. But, we should not, cannot and will not be so unmindful of our trust and duty as to supinely let ridiculous requests override us. We know we keep on the side of caution, and that occasionally a unit supplied might be a trifle light for some overweight patient whose weight had not been made known to us. We can say however, that no one has been blinded by our tryparsamide; that, for two years there have been no treatment fatalities except one; and, but two exfoliatives, and one case of aplastic anemia. Really an extraordinary record especially considering the unknown sources of the water used to make solutions.

For obtaining maximum effectiveness of therapy, and insuring safety, it is essential that we adhere to doses known to be the most appropriate ones for average age; sex and weight requirements. Vital weight above average for age and sex is apt to be justification for administering doses somewhat larger than average. But, persistence of positive Wassermann reactions alone, is not any justification whatever for overdosing. Overdoses are indefensible even if the harm they cause is not recognizable early in treatment. They actually lower tissue resistance without being more effective in destroying treponemes, and treatment bordering the hazardous cannot be continued sufficiently long. Syphilis is a disease to be worn out, not slugged out. Therefore, on the prescription blank which will soon be available, we will adhere to dosage, length of courses, sequences, and the principles of continuousness of treatment: all as recommended by the United States Public Health Service, and by the latest Syphilis Conference of The League of Nations.

Consonant with the necessary safety principles mentioned, every doctor who requested drugs has been promptly sent sufficient for each reported case kept known to us as under treatment.

For lack of time we cannot undertake to explain why arsenicals and heavy metals should not be supplied during the same treatment month, but that fact we will gladly elucidate after the meeting, or with any doctor who cares to visit our Central Control Office at 300 $\frac{1}{2}$ South Second Street, Springfield, Ill.

In closing we may again assure you that sufficient monthly allotments of either an arsenical

or a heavy metal can always be obtained free from us for each reported case; provided only, that the request certifies continuance of treatment and states the name or key number of the cases for which one or the other drug, or a special requisition, is being requested.

DISCUSSION

Dr. H. J. Burstein, Decatur: I am sure that most of us are acquainted with the added advantages that the State Health Department now affords us in the control of syphilis. Surely, enough is being said about early diagnosis, dark-field examinations, routine pre-natal serology, and continuous therapy with the arsphenamines and bismuth, so that the campaign against the disease should be well under way. The epidemiologic control work undertaken by the department has been greatly enhanced by the addition of full time investigators and with the distribution of the drugs free of charge in all cases, certainly none should be denied therapy because of finances.

From the statistics of the United States Public Health Service, and the Cooperative group, it appears that the efficiency of such a campaign will be primarily gauged by the percentage of cases of primary and early secondary lues coming under observation, that will receive a minimum of 20-30 injections of an arsphenamine and 40 bismuth. This minimum number has been conceded to guarantee a fair degree of security against mucocutaneous relapse and serologic reversal, except in the occasional therapeutically resistant case.

Certainly from the statistics formulated by the Cooperative group studies, we are in a better position to give the patient a sound idea of the problem involved, the necessity for receiving 18-24 months' continuous treatment, and a fairly reliable percentage figure of his chances for clinical and serologic cure, and thus obtain his confidence. In a program such as we are engaged, I believe it best not to dwell on the controversial subjects of clinical, serologic and biologic cure. For practical purposes, imply to the patient that he will get well and stay well. It is when we speak of the uncertainties of cure to the patient that we are apt to lose his confidence and have him discontinue treatment prematurely.

Regardless of whether the patient is treated privately or in a clinic, the personal contact factor between patient and physician will, in great part, determine the patient's willingness to cooperate and receive the specified amount of treatment. In our clinic at Decatur, which has been operating through the facilities of the State Health Department, the Decatur and Macon County Hospital and the Decatur Community Chest, we have attempted to limit treatment to those unable to pay their regular physician for adequate care, and all cases must be referred by a physician or local health authorities.

During the five-year period from January 1, 1933 to January 1, 1938, we have had 239 cases of recently acquired syphilis. Of this group, six were transients, five were institutionalized and 24 eventually returned to their family physician for completion of their treat-

ment. Of these cases, 71% received continuous therapy with alternating injections and overlapping courses of bismuth salicylate and neoarsphenamine, most of them receiving considerably more treatment than the minimum of 24 and 40. An additional 11% received at least 20-30 injections of arsenicals or bismuth, either because of irregularity in attendance, failure to report or intolerance to medication. The remainder either received totally irregular treatment after the first few weeks or disappeared.

It has been our practice to give neoarsphenamine in courses totalling 6 grams, the usual dose being .6 grams, but using smaller doses in starting treatment and where the customary dose is not tolerated. In seropositive and seronegative primary cases, neoarsphenamine is given at the onset. In secondary lues a preliminary series of 4-6 bismuth injections is given. In many instances, if the patient has difficulty in reporting twice weekly, we have given combined therapy, always using an insoluble, slowly absorbed bismuth. In most cases combined therapy has been tolerated as well as alternating therapy.

While the serologic follow up is of utmost importance, we must remember that we are treating the patient and not the "blood test." It has been our practice to repeat the serology following each course of therapy and at the conclusion of treatment to have the patient return at intervals of from six months to a year, always bearing in mind the possibility of relapse and serologic reversal.

When necessary a complete physical examination and any indicated laboratory work is done. A urinalysis is obtained routinely at the start of each course of therapy and repeated where signs of intolerance develop. In lues complicating pregnancy, the urine is examined weekly, and treatment is usually continued up to term.

Our outstanding difficulty is our inability to obtain spinal fluid examinations. We have not attempted to do them routinely, mainly because of the patient's unwillingness to have spinals performed. Undoubtedly many cases of paresis and tabes could be prevented by earlier diagnosis of central nervous system invasion and institution of fever therapy in addition to chemotherapy.

In closing let me briefly enumerate a few factors deemed of primary import in the operation of a clinic:—

1. A service that will be available to all forms of cases, especially maternity and congenital cases.
2. A record system stating the diagnosis, especially the stage of the disease when first seen, which will in turn determine the amount and type of treatment. Most important are progress notes, giving details of the patient's response and any signs of intolerance or idiosyncrasy to various medications used.
3. Facilities for all necessary laboratory work.
4. An epidemiological service, such as the State Health Department has organized, for seeking sources of infection and contacts.

Dr. S. W. Becker, Chicago: There is no doubt that we are making progress in our campaign against syphilis. Every year more and more blood tests are being run, the increase being due to the necessity for premarital examination or as the result of routine blood tests on the parts of clinics, hospitals or private physi-

cians. Many physicians say, "I can't take routine blood tests on my patients," but it can be done. A physician who visited my exhibit this morning stated that in her office blood had been taken regularly for five years. The office nurse takes the blood from the patient's arm with no apologies or excuses, and the patient doesn't know what it's all about unless a positive test is obtained. The same approach to the patient is valuable in obtaining spinal fluid for examination. I do not see how syphilis can be treated intelligently without knowing the condition of the spinal fluid, and treatment without this knowledge is an injustice to the patient. In the University Clinics we simply tell the patient that it is necessary to take a test out of his back, and often-times the fluid is removed and the patient goes home without knowing that he has had the much dreaded "spinal puncture." In this way we have discovered many cases of neurosyphilis, and by giving appropriate treatment have saved many lives.

Dr. Burstein brought up a good point in the simultaneous use of arsenical and bismuth. The late Prof. Schamberg condemned the simultaneous administration of arsenical and mercurial drugs due to the supposed danger of complications, but advocated the simultaneous use of arsenical and bismuth preparations, since with the combination less arsenical had to be used and consequently there was less danger to the patient. During the ten years that our clinic has been in operation we have given arsenical and bismuth in injections on the same day, so that the patients have had to attend the clinic only once weekly. We use a great deal of bismuth and less arsenical than is used by some syphilologists. It is evident that treatment once weekly is sufficiently frequent for the ordinary case, and the practice of having the patient attend twice weekly only adds unnecessarily to your overhead and inconveniences the patient. I do not know whether this would be an efficacious method were mercury substituted for bismuth, but mercury is used so little that the question has no practical significance.

There are other important factors in the handling of the syphilitic patient. A physician told me this morning about a woman who had consulted her after having had treatment for four years, who still had a 4-plus blood test, about which she was very much depressed. Assuming that her examination and treatment had been of the highest calibre—and too often they are not—she had been informed too well relative to her blood test. The report is of no value whatever to the patient and is purely for the information of the physician. We explain to our patients that the test is a clue which ferrets out the occult cases, but that treatment is based on experience and principles, and is regulated almost never by the results of the blood test. The occasional fixed positive which appears even after good treatment is only an indication for a yearly course of bismuth for the insurance of the patient's health.

The whole problem of the management of the syphilitic patient throughout the country is interesting from not only a public health standpoint but from the standpoint of saving the communities a great deal of money they are now spending for insane asylums and other institutions. The problem of getting adequate care for

the patient is not always easy, but the city of Detroit and other communities have shown that it can be done. Detroit is the proud but probably uneasy possessor of a medical school, that of Wayne University. Their full-time professor of dermatology is supervisor of the syphilis clinic operated by the city, so that the patients obtain the benefit of the very best that medical science has to offer. Of course, gonorrhea, knowledge of which requires an entirely different type of training, is cared for by a genito-urinary specialist. Obviously, this ideal solution is not possible for all communities, but some sort of consultant service can always be arranged for, and the practitioner can take advantage of practitioner-specialist coöperation, so that the patient has the advantage of expert evaluation, although he is being treated by the practitioner.

I believe that we are fortunate in being one of the states where a great deal of effort is being expended on the syphilis problem.

Dr. Winston H. Tucker, Evanston: On your lumbar punctures, do you rest the patient after you make the puncture or do they go right home. This is one of the problems we are up against in our clinical work. We are afraid to do that. We have been advised to keep the patients over night. We are at a point where we want to do lumbar in a number of patients, but don't know exactly where we are going, and I would be glad to hear what you do.

Dr. Becker: We use a 21-gauge needle, which is a very fine needle, and remove 6 cc. of fluid, and tell the patients to go home and stay in bed for two days, and we have very little difficulty.

No closing discussion.

Dr. S. M. Miller, Peoria: Syphilis will never be controlled so long as cases are reported by symbol. This implies a dependence upon the physician for epidemiological studies. This latter is the responsibility of health administration and not that of the physician. We cannot expect the physician to investigate contacts and sources, have them examined and follow the chain of disease wherever it may lead. A community will not develop a complete venereal disease control program until proper epidemiological studies of all cases of venereal diseases are made, both clinic cases and those of private physicians, following contacts and sources of private cases just as is done in the clinics. The time has come when symbols are to be discarded when reporting venereal disease.

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CHRONIC NASAL SINUSITIS AND THE EXTERNAL ETHMOID-FRONTAL- SPHENOID OPERATION

IRVING MUSKAT, M. D., F. A. C. S.

CHICAGO

The problem of chronic sinus disease presents a very interesting, fascinating and intricate problem. I say problem because there is an indictment by the public as well as by the general medical profession against sinus disease. I believe that there is not one among you who has not encountered chronic sinus disease patients many times who tell you before you express your opinions that they will not undergo any surgery, or any more surgery, because they have learned from experience or from others, that sinus operations are of no avail. And so the expression "Once a sinus disease, always a sinus disease, and once a sinus operation, always a sinus operation" is the common expression in every walk of life. It has been so labeled not only by the public, the sufferer and the many physicians, but even by the rhinologist who attempts such relief.

The result of this indictment against sinus disease has been a battle of science to unfold new facts and new methods to combat it—and these I wish to bring before you. Through this progress of modern medicine much has been accomplished and it is our duty to acquaint the physician and the public with just what has been achieved.

In order to apply such progress to a great satisfaction we must understand the fundamental facts of chronic sinus disease. To the average medical man—and certainly to the greater part of the public—there is a lack of this understanding. They are not acquainted with the facts or have shut their minds as to whether the condition is the result of infection or allergy; or whether the antra, ethmoids, frontal or sphenoids are affected.

It is therefore of fundamental importance in our attack against this problem to make a correct diagnosis. It is necessary to determine the pathological status of the nose. If by history, examination, observation, x-ray and other clinical criteria at our command we determine what the pathological status of the nose is, then—and

only then—can we begin to act and act intelligently. Certainly the procedures to effect a cure will vary according to these fundamental findings. Necessarily the procedure to eradicate an antrum infection will be different than when the ethmoids, sphenoids and frontals are diseased. The procedures necessarily also will vary according to the fundamental pathogenesis and the pathological status of the involved sinuses.

To those who have been misguided, let it be known that chronic headaches and nasal and postnasal discharge may be the manifestations of one or more infected sinuses; and, as the antrum is often the sole offender, let us therefore first consider it in our attack. Under such a condition a cure of the chronic sinus disease—in this case the antrum—should be expected under intelligent treatment. Such intelligent treatment depends upon the experience of the rhinologist and the interpretation of the pathological findings. This may be accomplished by antrum lavage alone or together with antrum window resection—depending upon the status of such investigation. When such conservative measures have proved inadequate, the removal of the entire antral mucosa by the Caldwell-Luc operation or its equivalent will accomplish a successful result. Clinical experience and knowledge of pathological findings will determine whether conservative or the more radical procedures should be instituted after careful examination of the patient. In this connection it must be remembered that the antrum is most usually a single cavity, easily and completely attacked by the Caldwell-Luc operation and that the removed diseased lining will be replaced by a new mucous membrane or at least a lining without suppuration. There are hundreds of such cases that await the skeptic, the disillusioned and the seemingly hopeless. Those who find fault with these facts will furnish observations and statements in the literature that a chronic osteitis may coexist and that this inflamed and infected bone beneath will defeat even the complete removal of the infected mucous membrane. Just what percentage are truly the expression of this additional pathological condition cannot be fully realized in our present state of knowledge, and therefore such criticism may be a misinterpretation of the facts. However, should this be the case without any doubt, the objection should be overcome by a removal of

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the osteitis and the entire infection controlled. Whatever is the final answer to this question, it may be said in passing that chronic antrum disease is almost always eradicated in the last resort by the Caldwell-Luc operation. The critics may also state that an allergic condition may coexist which is the underlying pathogenesis of the diseased mucosa. In answer to this rebuff no one will gainsay that the allergic condition should not be determined and controlled if possible, but it is also important to remove the chronically infected antral mucosa which has been engrafted upon an allergic membrane.

Now we come to a consideration of ethmoid, frontal and sphenoid disease. They are the sinuses of chronic disease, where after many attempts to eradicate the condition the sufferer is still left with his plight, often added to despair and sometimes mental derangement. These are the sinuses that are mainly responsible for the slogan "Once a sinus infection, always a sinus infection, and once a sinus operation, always a sinus operation." These are the crimes with which the public has accused the medical profession. But in the battle to freedom the rhinologist must secure all the knowledge and experience scientific endeavors have furnished during the past years.

There are to begin with certain fundamental facts which must not be cast aside. The chronic infection of the ethmoid-frontosphenoid group in the first place precludes that an acute condition existed and that early and intelligent treatment in these cases would have prevented a great number of chronic ones. Together with this fact, the public must be made aware that to avoid chronicity that every acute and subacute sinus condition have early and decisive treatment by those capable of administering such measures. It may be necessary to institute such simple measures as shrinkage and suction, or it may be important in addition to remove infected tonsil and adenoids. Or it may be necessary to remove a deviated portion of the septum or to remove a few anterior ethmoidal cells, or to infract or remove a part of the middle turbinate. When such decisive measures are instituted early and intelligently, a great number of chronic cases would be prevented. But such a utopia is not to be expected considering the knowledge and financial status of the general public; and so the cry for substitutes, such as indiscriminate use of vac-

cines, vitamins, electroheating, skin-scratching and what not, continue to din the ears. Such raucous clamoring must be subdued to its right and honest position if we are to hear the voice of progress.

Let us further consider this group of cases of purulent fronto-ethmoid-sphenoid disease that has resulted from lack of adequate early attention or has persisted in spite of many intranasal operative attempts to effect a cure. This class of sinus disease precludes the involvement of the posterior group, namely, the posterior ethmoids and sphenoid sinuses, often with a chronic frontal sinus involvement. Many of these cases are suppurative from the beginning, while others begin as a hyperplastic, non-purulent type which later becomes purulent. The diagnosis of this state is made by the characteristic history of chronic nasal discharge, repeated nasal operations and substantiation of the pathologic picture by examination and x-ray findings.

Before pointing out the reason for failure to obtain a cure by the so-called conservative intranasal operation, it is pertinent to define "a cure." Ferris Smith aptly states: "The ideal cure obviously demands the restoration of the normal condition or function, but this is too much to expect in any long-standing infectious process. It can be closely approximated, however. A clinical cure demands the complete removal of the underlying pathologic condition with the minimum disturbance of function and the preservation of the normal appearance of the patient. It presumes the complete eradication of infection with its remote signs and symptoms and the absence of local manifestations."

The repeated attempts to cure chronic suppurative disease of the posterior ethmoids and sphenoids by an intranasal operation has been notoriously futile because of the wide anatomical barriers to reach all of these cells through this route. We are all acquainted with the wide and anomalous extensions of the ethmoid cells in the skull which cannot be reached by direct vision through the nose. The chronic infection of the entire mucosa with hyperplasia of the glandular structure, the multiple abscesses and cysts in the mucous membrane often present, the existing fibrosis and polypoid changes and the periostitis of the underlying bone cannot be obliterated by intranasal methods.

We are also aware of the extreme difficulty in

removing all the pathological mucous membrane of a disease sphenoid through the nose and the tendency of its ostium to close again unless the diseased lining is eradicated and subsequent infected granulations are obviated by the complete removal of its floor. The radical and efficient removal of the sphenoid floor through the nose entails the danger of intracranial trauma with subsequent meningitis and death, as well as the danger of uncontrollable hemorrhage. When these important principles are not accomplished, inadequate drainage and reinfection reoccur. Add to these barriers the danger of working in these regions in a bloody operative field, gives further reason for the prevalent failures and discouragement of eradicating posterior ethmosphenoid disease by the intranasal route.

The intranasal route may be considered proper to promote drainage and aeration by conservative measures where there is subacute edema or inflammation of the superficial layers of the tunica propria or when there is an early polypoid or hyperplastic condition.

In retrospect, it is not difficult to account for the failures of intranasal surgery when one considers the truth of Ferris Smith when he states: "In an extensive experience, I have never failed to find bacteria in those chronically diseased sinus linings. They are common in the subepithelial areas in the early chronic cases and are always found about the glands and vessels and in the reticular spaces in the old cases. One frequently finds periostitis and osteitis to account for the recurrent symptoms after incomplete removal of the diseased tissue. Pure cultures are present, the green hemolytic and the hemolytic strains being about equally frequent. The commonest accompanying organisms are pneumococci and micrococcus catarrhalis."

It is therefore apparent that any attempt to exenterate all pathological extensions of the ethmoid cells and the associated osteitis and the ablation of the sphenoid mucosa and its floor intranasally is practically impossible and anything but conservative.

To overcome the difficulties and inadequacies of these problems the external approach to the fronto-ethmosphenoid pathological changes has been developed. It now offers the least radical and only certain means to accomplish a cure. Radical and conservative being relative terms, it becomes at once apparent that it is far more

radical to attempt (which is impossible and dangerous) to eradicate all diseased tissue via the intranasal route. The external route by contrast, therefore, affords a more conservative method of approach because under direct visual guidance every crevice can be accurately and adequately dealt with.

These principles and facts are gradually becoming more generally accepted by even the most conservative minds in rhinology. They are accepting these principles because of an open and progressive attitude. As Mosher puts it in evaluating this progress, "The pendulum is swinging from the intranasal ethmoid operation to the external. I agree with the change. If your knowledge of applied anatomy justifies your doing any ethmoidal operating at all, thorough work can be done more safely by the external route."

The principle of this procedure is not new. In 1894 Jansen describes the basic principles and technique of such a procedure, and in 1899 Knapp again described its efficacy and success. However, it remained for Lynch of New Orleans in 1921 to revive the work of Jansen and Knapp and give it its present impetus. In 1920 Sewell sought to overcome a bloody operative field which made nicety of technique impossible by a procedure of ligating the ethmoidal and sphenopalatine vessels supplying the operative field through the operative incision and in the immediate neighborhood of the surgical field. To the skill of Ferris Smith we owe the invention of special instruments to facilitate and expedite the execution of the operation and the ligation of these blood vessels. Thanks to these courageous men we are today on a new threshold of enlightenment and accomplishment. Those who will not seek the light will remain in the dark and remain defeated in the battle against chronic sinus disease. It is the acknowledgment of our defeats and the acceptance of new thoughts and new ways that carry us on to greater accomplishments and achievements. True, the external ethmosphenoid approach is no plaything for the untrained and unskilled, as its execution demands experience, technique and knowledge of sinus pathogenesis, pathology and anatomy.

The principal features of the technique may be briefly described as follows: Preoperative medication consists of giving sodium amytal or its equivalent the night before and before operation to insure rest. Cocaine-adrenalin pledgets are

placed in the nasal chambers to anesthetize the mucous membrane. Essentially the operation itself consists of incising the skin and periosteum over the nasal and frontal bone between the bridge of the nose and the inner canthus of the eye followed by separation of the inner periosteum and lifting the periorbita from its attachment, thereby exposing the lamina papyracea and lateral wall of the ethmoidal labyrinth, the floor of the frontal sinus and the ascending maxillary process. By careful dissection the anterior and the posterior ethmoidal arteries are isolated, tied and cut to insure control of bleeding when the intranasal structures are removed. The external wound is kept open by special retractors designed by Ferris Smith for this purpose. By entering the nasal chambers through the lacrimal fossa the diseased tissues are removed through this external opening or through the nose. At all times the use of the punch forceps and other instruments can be controlled by direct vision. In this manner the entire ethmoidal labyrinth up to the cribriform plate, as well as the floor and anterior wall of the frontal sinus, can be readily and efficiently dealt with. Also the sphenoid ostium, its floor and anterior walls can be attacked by direct vision and, if expedient, the tying off of the sphenopalatine artery along the base of the sphenoid sinus can be readily accomplished. In this manner, under direct vision and with control of bleeding, all diseased tissue is removed—leaving a smooth, continuous, clean surface of healthy bone. After the insertion of a rubber tube along the nasofrontal duct, the periosteum of the incision is pulled over the maxillary and nasal processes and approximated and the skin closed. No packing is left in the nose because there can be no postoperative hemorrhage. When indicated, the antrum may be next attacked by the usual Caldwell-Luc operation. The postoperative reaction is slight and the patient can be discharged on the fourth or fifth day. The nose is kept clean by suction and kept oiled with 1/4% phenol in liquid albolene until healing is complete.

In considering the full value of the external approach in the eradication of chronic disease of the fronto-ethmosphenoid group we must be mindful of some other important truisms. When the frontal sinus is large and its mucosa chronically diseased, its lining is also removed with the removal of the floor and diseased portion of

its walls. A persistent nasal discharge after the diseased ethmoids and sphenoids, as well as the antrum are obliterated, is usually due to infection persisting in the frontal sinus. Clinical and pathological findings at the time of operation will determine whether the frontal sinus should be included at the operation. When the obliteration of the frontal sinus is included in the operation it is necessary to keep the patency of the nasofrontal duct open, to avoid its closure by the falling in of the periorbita of the eye against the septum, preventing drainage from the frontal sinus and inviting further frontal sinus complications.

To obviate such complications, Sewall makes a frontonasal mucous membrane flap, while Smith uses a Thiersch graft held in place by a specially designed inflatable rubber bag. However, these procedures are difficult to execute efficiently by even the average operator and besides have their faults. It has been recommended that merely the simple insertion of a rubber tube in the nasofrontal duct and the taut approximation of the periosteal incision will prevent such closure. This has not been my experience and I am sure it is not the experience of those who have operated many cases. Where the frontal sinus is small, I believe healing-in by granulation by external drainage will obviate any further recurrences. Where the frontal sinus is large and its lining must be removed, together with exenteration of the ethmoidal labyrinth and sphenoid, I believe that the Ferris Smith Thiersch graft, although it has some objections, is the best method.

There is one other phase to be mentioned in connection with the external fronto-ethmosphenoid disease. It is to be conceded and remembered that a great many cases of chronic nasal sinus disease have their pathogenesis in allergic states. It therefore stands to reason that should one eradicate all diseased tissue by this method, it is important to discover and control the allergic agents if we are to prevent a repetition of the patient's misery. To say the least, this problem has been responsible for subsequent discouragements of our efforts. Of course, the status of the sinus condition presents the indications for surgical intervention and it must be remembered that after deep and chronic changes occur in the mucous membrane of the nose as the result of allergy, control of the allergic state

will not cause a return to the normal of chronically involved mucous membranes of the nose.

Now, what about allergy? I do not want to go into a detailed discussion of allergy in connection with nasal sinus disease, but want to point out some of the dangers of riding this hobby too high. Success in this field demands cooperation of the rhinologist and allergist and both must have knowledge and intelligence. The mere scratching of skin will prove disappointing in most cases unless knowledge, experience and cooperation are united. Allergy is a wide term and we know little of its mechanism and meaning. Individuals may react differently at various times under different conditions, and may show positive reactions of substances which are only remotely related to the causative agent. Not infrequently individuals show reactions to various atopic substances which have been engendered through some other fundamental atopic influence and which have no bearing on the nasal condition. There are many pitfalls in the scratching hobby and we cannot follow skin reactions blindly. There is also the thought of bacterial allergy, physical allergy and food and drug allergy. Just where one begins and one ends has not been answered and their mechanism in relation to each other is still shrouded in mystery. Probably physical chemical research will discover the mechanism and meaning of such elusive cellular reaction.

There is one other phase which should be mentioned, i. e., the study of x-ray findings. Here, too, cooperation of the rhinologist and roentgenologist is very important, and such cooperation, to be of greatest benefit to the patient and physician, must be combined with experience and intelligence. Merely taking pictures and labeling them will result in many failures and misconceptions. But progress is being made in this direction and the many foes in this combat are slowly but definitely being conquered.

In conclusion, may I hope that under the influence of our modern age of reason and progress, ignorance will change to understanding and knowledge and darkness into light with benefit to those thousands of unfortunates, and credit and satisfaction to ourselves.

25 East Washington Street.

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DISCUSSION

Dr. J. Allan Weiss, Chicago: Doctor Muskat has given an excellent presentation of the principles pertaining to this valuable procedure. The external fronto-ethmosphenoid operation has a definite place in the treatment of certain multiple sinus infections and their complications. With this technic one can successfully eradicate all diseased tissue. The procedure leaves no bony deformity and only a negligible scar. I have employed it in 15 cases, in private practice and at the Illinois Eye and Ear Infirmary, with satisfactory results. One cannot emphasize too strongly the necessity of restricting this operation to those cases in which it is warranted on the basis of the extent and chronicity of the infection. If the indications were determined by a careful consideration of the history, together with the clinical findings and x-ray evidence, it would do much to refute the prevalent criticism of indiscriminate radical sinus surgery.

I should like to report a case of meningitis of rhinogenic origin in which the external approach was used to advantage. When first seen, the patient had an acute exacerbation of a chronic pansinusitis, with considerable chemosis of the right eye, high fever, leukocytosis, severe headache, rigidity of the neck and a positive Kernig sign. He was semi-comatose. Roentgenograms showed cloudiness of all the sinuses on the right side. The spinal fluid contained 450 cells per cu. mm. with 53% polymorphonuclears. Direct smear and culture of the fluid were negative. When the frontal and ethmoid sinuses were entered, the mucosa was found to be hyperplastic and acutely hyperemic. The sphenoid, in addition, contained a sero-sanguineous fluid. Recovery after the operation was dramatic. I believe that it is justifiable to state that opening the sphenoid sinus terminated the advancing serous meningitis before bacterial invasion occurred to convert it into the diffuse suppurative stage.

The external combined operation has been aptly described as adequate or complete rather than "radical." Ferris Smith, Sewall, Lynch and others have pointed out that its advantages are:

1. Safety, as the operative field is under direct vision.
2. Effective hemostasis obtained by ligation of key blood-vessels.
3. Exenteration of cells not accessible via the intranasal approach.
4. Local anesthesia complemented by adequate pre-operative sedation.
5. Little or no pain during or after operation.
6. Mild postoperative reaction and short convalescence.

The technic, while painstaking and time-consuming, is not difficult. However, it requires a thorough knowledge of the regional surgical anatomy, based on cadaver dissection preceding operative experience; it demands a cautious respect for adjacent vital structures; and, it presumes the surgical dexterity and judgment possessed by any competent rhinologist.

Doctor Muskat is to be commended for stimulating renewed interest in this worthwhile procedure.

Dr. George Shambaugh, Jr., Chicago: I was much interested in Dr. Muskat's paper. I thought the most interesting part was his reference to allergy. I think allergy is much neglected and that it is very important in these chronic sinus conditions. I do not believe, however, that the answer lies in cooperation with the allergist. Hansel has become an allergist in his own right as well as a rhinologist, and is obtaining results far ahead of those that allergists have ever been able to obtain.

An interesting case of allergic rhinitis was a patient who had been coming to the office for many years because of ethmoid sinus infection complicated by a nasal sinus infection every winter. There was nothing to suggest allergy. When the nasal smear was examined for eosinophils there were a tremendous number found in the nasal secretion. That, according to Hansel, is important in the diagnosis of allergy. This patient went to Jamaica where his nose entirely cleared up. When he came back to Chicago the sinusitis returned. In Chicago he breathed a large amount of dust, and in Jamaica the air was dust free. I think he required five injections of autogenous dust extract and since receiving these he has had complete freedom from his sinusitis.

Dr. Thomas C. Galloway, Evanston: Any procedure which is radical should be without more danger than is commensurate with the results obtained. I happen to know about three cases of meningitis, all of which had had the Sewall type of external operation. It is not an operation to be done casually or without thorough study but it is at times necessary and offers a marked refinement in technique for the external approach.

Dr. Irving Muskat, Chicago (closing): I want to thank the members for their kind discussion but I feel that they have clouded the issue. I thought I had made clear the principles of the external approach to chronic nasal sinus disease, viz: the prophylactic care of acute and subacute nasal sinus conditions, the recognition and early treatment whenever possible of allergic states and the radical removal of infected mucosa and

bone when such conditions exist under any cause, especially when the conservative intranasal methods have failed to bring about any amelioration or have made the condition worse. I did not wish to give you a dogmatic list of indications for the external approach of the ethmoid-sphenoid-frontal involvement, but merely wished to bring before you a principle of thought to the problem as we are confronted with it today. This means the understanding of nasal pathology, pathogenesis and the knowledge of the inadequacy of intranasal measures in chronic suppurative ethmoid-sphenoid disease. I had hoped that there would be no issue involved about early allergic cases. To speak about nasal symptoms in an early case of allergic disease and its recognition by the eosinophiles in the blood and nasal secretions is only clouding the import of my message. What I had to say was that allergy may have been the basis for the chronic suppurative nasal sinus disease which cannot be controlled by conservative nasal measures in the late stages of disease. As regards to the value of asthma and nasal sinus operations I want to say that I have purposely avoided such argument because it was not the topic of my paper and because we have not at this present time mastered the principles of sinus disease or even those of asthma. Whether asthma is to be benefited by a Caldwell-Luc operation or not is outside the question of whether the nasal operation should be performed. The indications for a Caldwell-Luc operation is made primarily on the nasal disease. Its relation to its benefit to the associated asthma is still a mooted problem because all the facts are not known. However, there should be no question about the operation on the nasal sinuses in the case of an associated asthma when the nasal condition demands per se such an operation. My personal feeling in this matter also is that such a radical operation on the nasal sinuses cannot increase the asthma but on the contrary often improves it. The same principles must be applied to chronic suppurative ethmoid disease associated with asthma where conservative intranasal operations have failed to control the nasal suppuration and incidentally have failed to benefit the asthma. The nose per se under such circumstances will demand the external ethmoid approach for the removal of nasal disease which cannot be accomplished by the intranasal route. Whether the asthma is to be relieved or not is another question too lengthy to discuss at this time. There are so many facts to be considered that to become dogmatic will only prevent progress in the solution of these problems. As far as I am concerned I may merely wish to state that the external ethmoid approach depends upon the nasal condition itself and that its value to an associated asthma is another question. Personally I believe that all in all, such procedures should benefit the asthma as well in many cases, but time will not permit me to discuss chronic bronchial changes and other factors less known that occur in untreated chronic asthma. If we stick to the fundamental facts and principles I feel sure that the clouding of the issues will ultimately clear.

CAUSES OF INTERNAL HEMORRHOIDS

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Internal hemorrhoids are varicosities of the superior hemorrhoidal vessels and arise entirely within the anus. They begin at the points of anastomosis between the portal and the caval systems. These anastomoses are numerous. The most common origin is at the level of the valves of Morgagni about a half inch above the anal orifice, and from here they gradually extend up to the larger trunks and plexuses. Even normal veins are somewhat enlarged in this situation and are called glomeruli.

Hemorrhoids occur in two distinct types, the small capillary and the large venous.

A capillary hemorrhoid is a small tumor rarely larger than the end of the little finger and sometimes as small as a pinhead. It is an arterial naevus, spongy in texture and resembling a strawberry. Early in their existence, these tumors have a granular surface covered with a thin wall and are likely to bleed. Later, a plastic exudate and thickened areolar tissue covers the vessel; hemorrhage then occurs less readily. The gentlest examination or even the passage of the feces may be sufficient to start hemorrhage. I recall one case in which bleeding was profuse while the pile was found to be no larger than the head of a black pin. Excessive hemorrhage, particularly if spurting in character, is pathognomonic of capillary hemorrhoids. Frequently large amounts of blood are lost and a number of deaths have been recorded from this cause. Of course a large capillary or arteriole is necessarily involved here.

This tendency to profuse bleeding makes a capillary hemorrhoid much more dangerous than the venous variety. In the palliative treatment this distinction is imperative, because the patient may be exsanguinated while the physician is temporizing with injections of styptics. The capillary piles do not protrude or cause any of the pain or discomfort attendant upon the venous variety. Hemorrhage itself is the cardinal symptom and requires energetic or even heroic treatment.

The venous hemorrhoids are of more common occurrence than the arterial. The pile may appear as a good sized tumor, frequently a half to an inch across its base and covered with a

livid bluish and glistening mucous membrane. Matthews reports seeing one as large as a small orange. These venous hemorrhoids are situated in the submucous connective tissue. They begin with venous pools and are composed of a dilated and varicose vein, with its capillaries, and also the arterial capillary supply. They are located, usually, one on each side of and slightly in front of the posterior commissure and on the right and sometimes left of the anterior commissure. Sometimes the whole anal ring is a mass of varicose veins, especially when due to diseases of the heart, liver or kidney, and this varicose condition may extend the whole length of the rectum.

Sometimes several small veins may be twisted together into one mass. The sacculations and varicosities are limited to the venous vessels and do not affect the arteries. The tumor is not wholly composed of veins, but around this mass of vessels there is a fibrous capsule which sends trabeculae (partitions) in between the veins. The mucous membrane covering the pile is chronically inflamed and the walls of the veins are easily thickened by this inflammatory hypertrophy; later they are extremely thin, with nothing but an endothelial covering. Sometimes such vessels may form large venous pockets.

Internal hemorrhoids are brought on by anything that increases local blood pressure. Man is the only animal assuming an erect posture during most of the waking hours. In this position, of course, a heavy column of blood must be lifted through these veins continuously for many hours. During our whole active life, there is the predisposition to the formation of hemorrhoids, and only some little local congestion or inflammation is required for the varicosities to develop. For this reason proctitis is a very common cause of hemorrhoids.

The Relation of Proctitis to Hemorrhoids. Early in my work I noticed this association of hemorrhoids with proctitis. The acute catarrhal proctitis is often met with and always you will find an edematous mucous membrane with its hemorrhoidal vessels engorged. As the proctitis subsides the hemorrhoidal edema and engorgement also is reduced and finally disappears. If, however, the proctitis persists as a subacute or chronic form, the hemorrhoids also continue and a gradual hypertrophy of the mucous membrane

results. This increases the bulk and weight of the mucosa, which separates and slides down on the areolar tissue until it is grasped in the sphincter. The spaces of the submucosa about the hemorrhoid are filled with connective tissue. Later, when the proctitis reaches the atrophic stage, the hemorrhoids remain, because of this connective tissue infiltration which permanently constricts the venous overflow.

Now a second factor enters. The descending fecal mass, acting in the reverse direction on the veins, distorts the latter further and tears more mucosa from the muscular wall. With each bowel movement, the hemorrhoidal mass acts as an obstruction, as the feces are forced through. This increased muscular action drags down the hemorrhoid and the adjoining mucous membrane until they prolapse, thereby increasing the size of the hemorrhoid itself. Finally when they have attained considerable size, they prolapse easily and act as foreign bodies tending to excite the sphincter.

Causes of Hemorrhoidal Congestion. Hemorrhoids brought on in the manner described are the result of digestive disturbances, the improperly digested or fermenting bolus acting as an irritant. In this way, constipation is a frequent cause, while the vein is ruptured by the frequent engorgement and stretching due to the passage of the feces. Thus it is that drugs used to relieve the constipation (aloes, senna, calomel, gamboge) also frequently congest the rectal circulation. Warm enemas also act in this manner. Certain articles of food, by irritating the mucous membrane, cause increased peristalsis or tenesmus and thus provoke hemorrhoids. (Notable among irritating comestibles are spices, peppers, mustard, sauces, radishes, water-cress, tamales, chili con carne and pickles, also alcoholics and tea.) An excess of a carbohydrate diet that cannot be cared for by the liver blocks the portal circulation and later the hemorrhoidal vein. These dietetic changes account for the apparent influence of the seasons upon the hemorrhoidal circulation. As the warm spring weather comes the system cannot dispose of the same amount of carbohydrates as it had been accustomed to do during the winter, and so the load is thrown upon the portal circulation.

Besides constipation there are other conditions that cause straining or a bearing down and thus tend to congest the pelvic venous current; among

these particularly, are stricture of the rectum or urethra, stone in the bladder, an enlarged prostate gland, the pregnant uterus or a myoma of that organ, pelvic exudates, adhesions, even a retroverted uterus. It is well to bear each of these conditions in mind, because a patient may consult you when suffering from one of them, and at the same time, complain of hemorrhoids. The hemorrhoids do not require treatment directly, being wholly dependent upon the underlying conditions. In this same manner, all those occupations that increase the abdominal or pelvic pressure will induce hemorrhoids such as severe muscular exertion or prolonged standing or sitting still, especially if on a vibrating platform, as in the case of railroad men, or teamsters. Desk workers also frequently are sufferers, owing to sitting in a bent-over position, which crowds the abdominal contents toward the rectum.

One other class of positive causes of hemorrhoids is disease of the heart, liver or pancreas and syphilis. Since the exciting cause in this class of cases cannot be removed there is no hope of curing the hemorrhoids, and a tentative treatment is all that can be undertaken.

Hemorrhoids Occurring During Pregnancy and the Puerperium. The physiology of the female pelvis constitutes an etiologic factor in the production of venous stasis, and therefore is a cause of hemorrhoids, which does not have to be reckoned with in the male. Unquestionably, the most important of these functional factors is pregnancy, which imposes upon the hemorrhoidal veins such a continuous pressure, or else so violent and sudden a pressure during labor, as to make the occurrence of piles a very frequent complication.

There are many other conditions which cause straining or bearing down and thus congest the pelvic venous current.

Constipation is the rule during pregnancy because of displacement of the bowels, abnormal innervation, general inactivity of the woman or interference by the enlarged womb with the bearing down efforts during defecation. One or more of these factors, together with the increasing abdominal tension, determine hemorrhoids as a common complication of pregnancy or the puerperium even in women who have been previously free and who may completely recover after confinement until the next pregnancy,

when they may have a recurrence. Sometimes these piles are very troublesome and occasionally serious. Anal fissures are frequently associated.

Hemorrhoids developing during pregnancy usually involve the internal hemorrhoidal vessels and vary considerably in the disturbances which they cause. In some patients they may be easily controlled and the fullness and tenesmus relieved or made bearable with cold compresses and a sedative ointment. In severe cases there is usually associated varicosities of the legs and vulva which altogether make a most unhappy woman. The vaginal vessels may be as varicose as the hemorrhoidal and the vaginal walls protrude through the vulva just as the rectal walls are forced out of the anus. These patients, because of the increased abdominal pressure together with autointoxications and faulty eliminations, demand energetic treatment. The varicosities of these vessels unless promptly relieved become permanent with all the attendant train of evils. Sometimes in severe cases these hemorrhoids swell up, over-distend, rupture and bleed and even become gangrenous sloughs while the gravid woman is reduced to invalidism. This dangerous condition and much of the suffering may be prevented by the physician watching his patient's elimination, and by proper exercise and the avoidance of promiscuous use of harsh cathartics at this time.

In a second class of patients the internal hemorrhoids cause but little annoyance during pregnancy, but they engorge and bleed during labor. Both these and the previous varieties predispose to perineal lacerations and some accouchers remove the swollen piles during labor, while others recommend waiting until after the puerperium. During the lying-in period both of these varieties cause a great deal of distress. If the internal hemorrhoids protrude they should be replaced and held back during labor as carefully as during the puerperium. Much can be saved by a competent accoucher. Of course, no attempt should be made to push external hemorrhoids within the anus.

A third variety of hemorrhoids occurs in patients who have not had any evidence of piles during their pregnancy but who have had long and exceptionally hard or instrumental labors. Sometimes the hemorrhoid may be seen during a labor pain or is found the next day. There is usually but one or two piles. Sometimes a definite pile

is not found, but the blood extravasates into the edematous tissues. This kind of hemorrhoid is due to the hydrostatic wedging apart of the different structures as the serum is effused into the peritoneum and about the anus by each propulsive labor pain. This increased succulence or edema of the parts, together with the crowding of the baby through the passage, drives the fluid between the connective tissue, thus separating the skin and the muscular walls. As this fluid is only slowly absorbed, it leaves the pouching skin tabs as a consequence. Unless these skin tabs are prevented from forming during the puerperium they will interfere with the proper toilet and lead to pruritus and necessitate removal later.

Overfilling of the bladder or sigmoid is perhaps an often overlooked cause of the persistence of this infiltration until skin tabs are formed. If your puerperal patient's pelvis is kept free from excreta, the lymph circulation will have a chance to carry off the fluids, but they cannot do so if the distended bladder or rectum presses upon the lymphatics.

Another factor to be remembered is that with the woman lying on her back the lymphatics and venous circulation must be lifted the height of the sacrum to get out of the pelvis. As both of these systems have poorly supported vessel walls, which are already weak and boggy with softening, the lifting of this column of fluid further slows the circulation. It is therefore essential that the lying-in woman be turned occasionally to assist the pelvic circulation and that the back and the sacral regions be massaged and the legs passively exercised.

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NASAL SEPTUM SURGERY IN CHILDREN

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The nasal septum develops from mesenchymal mesoderm and in its growth is at first membranous, then cartilaginous, and finally the mixed cartilaginous and osseous structure of the adult.

The primary nasal septum is very thick and separates widely the nasal fossae.

The mucosa at this time is quite thick and may be thrown into prominent folds persisting

into early infancy, especially about the future vomer.

Later by an ingrowth of cartilage from the body of the sphenoid the septum becomes converted into a cartilaginous plate. This is then divided into the perpendicular plate of the ethmoid, the vomer, vomeronasal and septal cartilages by ingrowths of connective tissue.

The perpendicular plate of the ethmoid does not undergo complete ossification until the 17th or 18th year of life, though this starts in the first year of life, usually from a single ossification center.

The true adult vomer grows from a pair of ossification centers one on each side of the cartilaginous septum. This starts at about the eighth week of fetal life and is not completed until after the fifteenth year of life. A plate of bone grows on each side, eventually fusing at the expense of the cartilage imprisoned between them.

The cartilaginous septum persists throughout life as the septal and vomeronasal cartilages without much change. These do not fuse with the neighboring bones, but form articulations with them and each other. The periosteal and perichondrial membranes are carried over from one part to another as suture membranes.

ETIOLOGY

The chief causes of septal deviation are trauma and abnormalities of growth.

Children and infants are obviously subjected to many injuries of the nose which as a rule involve the soft, pliable, movable portion of the nose and with it the cartilaginous portion of the septum. This may become luxated so that it obstructs one or both sides of the nose, or thickened by injured parts growing together side by side instead of end to end.

Most septal anomalies are due to the lack of the precise limitation and approximation of all the parts during the development of an adult nasal septum. The distance between the cribriform plate and the palate often becomes shortened and unless the perpendicular expanse of the septum is correspondingly short, deviations must occur.

The cribriform plate frequently is lower in the nose, and a high arch palate is often seen. These two factors are common causes of deviations.

An inequality in the development of the two plates of the vomer is another important etiological factor. Lastly, deviations may be caused

by the growth of turbinates or tumors crowding the septum over the other side.

SYMPTOMS AND DIAGNOSIS

When the cartilaginous portion of the septum is involved the diagnosis is easily made. The local symptoms vary with the degree and location of obstruction, yet it is sometimes surprising to find a marked obstruction without obvious symptoms.

The diagnosis of bony deviations is not commonly made in children first because too infrequently they are not looked for and secondly because an examination to determine their presence is not so easily done especially in very young children.

In nearly all children who have a marked septal deviation, there is besides the symptoms of nasal obstruction a more or less profuse nasal discharge. This produces two important trains of events, first the secretion is usually thick and tenacious and clings to the nasal mucous membrane especially along the floors of the nasal chambers and is dislodged only with the greatest difficulty. This fact in turn predisposes the child to more nasal discharge and obstruction and repeated infections with its attendant ear and sinus complications. Secondly, the child swallows large amounts of the nasal discharge and it is thought by many (1) that gastrointestinal disturbances result therefrom very frequently.

TREATMENT

Without going into further detail it is apparent that septal deviations in children require treatment very much more frequently than is commonly thought to be the case.

The objective of treatment is primarily the elimination of nasal discharge. Surgery of the nasal deviation is only indicated when conservative management over a protracted period has failed to give satisfactory results.

Alexander and Wyndham have written on the type of septum operation that can be done in children. They both reported many instances where the typical adult operation was done and good results obtained. Such a statement of course brings up the old question of how much of the septum may be removed without interfering with the development of the nose and sinuses. Study of the literature on this point only shows that opinion is divided, and that hardly anything has been done in an experimental way to prove convincingly the effects of an operation.

In the early days of the septum operation on adults, opinion was also divided on the healing of incisions in the nasal cartilages. Freer maintained that complete repair occurred while Ballenger said that this was not the case. This particular question is also of great importance in operations on children.

In several instances I have made incisions through the nasal septal cartilages in adults in vivo and months later removed the cartilage for microscopic examination of the incision. Reunion of the edges of the cartilage was never seen. But repair was effectively produced by the formation of fibrous tissue all around the incision, originating I believe, from the perichondrium.

As far as I have been able to conclude, removal of parts of the septum may be done without apparent effect on the growth of the nose but with two important exceptions. First, the anterior border of the columella supports the end of the nose and its removal or injury results in marked dropping and flattening of the nose; and, second, the dorsal border of the septum prevents sagging, and must be left intact.

However, I do not believe that enough is really known to warrant extensive removal of the septum in children as is done in adults and therefore, this operation should be strictly limited to the most extreme types of deformities.

It has been my experience that a little architectural improvement gives adequate results. If one increases the diameter of the nasal passage in the region of an obstruction by only two or three millimeters it is often astounding to see what great improvement follows.

White in 1930 wrote of the value of vertical or horizontal incisions in the cartilage to permit pushing a deviation towards the opposite side even if only for a few millimeters.

About this time too, Metzenbaum published his technic for the surgical correction of the subluxated cartilage. This operation is very useful in children even though the apparent result may seem insufficient.

I have had the opportunity to try three other procedures in the surgical management of deviated septal cartilage in children.

(1) To facilitate pushing the convexity of a deviation of the opposite side, I make both horizontal and vertical incisions in the cartilage. These are made directly on the cartilage after

the mucosa of one side has been elevated. The squares of cartilage remaining are attached to the other mucous membrane which should not be injured while making the incisions in the cartilage. Free mobility of the "checkerboard" cut cartilage is thus obtained. Splints hold the septum in the position desired.

(2) If this is not sufficient the second procedure is indicated which consists of splitting one or more of the squares sagittally and removing the unattached portions thus obtained. Splitting can also be done without the preceding checkerboard incisions if a mobile septum is not necessary.

(3) More effect can be obtained by procedure three which is simply the removal of one or more of the squares of cartilage following the making of the checkerboard incision.

Ridges of the vomer are the commonest deformity requiring surgical attention in children. I attempt to make one or more incisions with a small semilunar saw and then retract the bony deviation away from the lateral wall of the nose with which it is in contact.

Twenty-two children in private and clinic practice were operated upon between 1928 and 1933. In four the results were inadequate and they were operated upon again. In none has there been a sagging or depressed nose or any obvious developmental retardation. On the contrary strong, straight noses were the rule. Excessive nasal discharge was not always completely alleviated as several children also had considerable sinus disease. Adenoids were of course removed in all these children long before septum surgery was attempted. Turbinates were not removed in any instance.

Postoperative medical management over a period of months was also required in eight cases before there was complete cessation of discharge.

CONCLUSIONS

1. Nasal obstruction and chronic discharge are frequently the result of septal deviations.
2. Non-surgical treatment is frequently needed and most often adequate.
3. Occasionally surgical measures are indicated.
4. The adult type of septum operation is unnecessarily radical for children in all but very rare instances of extreme deformities.
5. Three procedures are suggested to aid in the conservative surgical management of septum deviations in children.

HUNTINGTON'S CHOREA AS A PSYCHI- ATRIC AND SOCIAL PROBLEM IN ILLINOIS

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While completing an exhaustive study of Huntington's chorea from the genealogical, sociological, clinical, pathological, and laboratory standpoints, it occurred to us that the present status of the disease in the state of Illinois as a whole, might be of interest to the medical profession.

This rare, chronic, progressive, degenerative, familial and hereditary affection was first described completely on April 13, 1872, by George Huntington,¹ whose name was given to the disease. Prior to that time the condition had been referred to as "magrums," "mad staggers," and "fidgets." The first definite reference to the disease found in the literature is contained in an article by Dr. C. O. Waters,² a clergyman-physician who wrote about it to Professor Dunglison on May 5, 1841, under the name of "magrums," for publication in the latter's Medical Practice. Prior to that time descriptions of chorea had appeared, but had referred essentially to chorea major, the hysterical form of the disease which had prevailed during the middle ages in epidemic form, and Sydenham's chorea which was described by Thomas Sydenham in 1686. Towards the close of the 18th century, during the period in which revolutionary changes in psychiatric practice were initiated by Pinel, and followed up by Georget, Esquirol, Heinroth and other famous pioneers of that period, a tendency to the descriptive and nosological approach was noted, and at that time various vague descriptions of choreiform disorders associated with dementia might very well have been amongst the earliest references to Huntington's chorea. Some fifty years later interest was centered on the disease for the first time in the Long Island-Connecticut district, and studies of this condition have therefore constituted an interesting chapter in the history of early American medi-

cine. Since Huntington's thesis appeared, about five hundred papers have been published dealing with one or more aspects of the affection. Although several have been concerned with the social aspects of the disease, the earliest in the English medical literature appearing in 1904, only one³ has attempted to consider Huntington's chorea from the standpoint of its incidence and significance in a large civic group in the United States. The earliest papers which were published, however, were concerned essentially with the genealogical and geographical aspects of the affection. The latter has been traced to an original Connecticut source in this country, though at about the same time colonies established on Long Island were found to have given rise to cases of Huntington's chorea also. Vessie⁴ was able to trace these first American cases to Bures, Suffolk, England, the affected individuals having arrived in the Winthrop fleet.

In 1915 and 1916 the impressive work by Davenport^{5, 6} and his workers appeared, tracing the disease in four family groups with 962 choreics among 3,000 odd relatives; he found that a half dozen individuals, including three brothers who had immigrated to America in the early part of the 17th century, were responsible for the nucleus which gave rise to these choreics. From the Connecticut and Long Island centers emigrations took place to Ohio, Kansas, Oregon, New York State, Canada, Vermont, Massachusetts, New Jersey, Pennsylvania, other parts of Connecticut, Iowa, Nebraska, Wisconsin, California, and Illinois, particularly to Chicago and Joliet, though other parts of the state were also settled.

As one glances through the older biennial reports⁷ of the Elgin State Hospital, beginning in 1870, one notes the relative scarcity of the word "chorea." In 1892, when the twelfth biennial report appeared, the classification of mental diseases included such terms as dementia, senile dementia, dementia paralytica, general paresis, and imbecility, in any of which Huntington's chorea might have fallen. The nomenclature represented very little improvement over that of Pinel, appearing almost 100 years before.

In 1894, the words "choreic insanity" were mentioned in connection with one male admission. In 1896 the disease might have fallen into any one of the following classifications in use at that time: primary dementia (dementia

From the Elgin State Hospital, Northwestern University Medical School, Dept. of Nervous and Mental Diseases and Institute for Juvenile Research.

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praecox), secondary dementia, paretic dementia, senile insanity, etc. In 1906 terminal dementia and organic dementia were added; two years later, the term "insanity of coarse brain disease" was used, and at that time dementia praecox was considered a primary mental deterioration included under "Insanities due to diseased metamorphosis of tissues."

In 1910, for the first time, the Elgin reports contained the term "Huntington's Chorea," as one of the focal or diffuse diseases under "organic brain disease," and including also such so-called entities as "aphasia"; senile organic brain disease and general paralysis of the insane completed the organic brain diseases.

In 1913, there were 14,273 mental cases confined in Illinois State Hospitals; in 1933, 26,202 patients resided in the same institutions. In 1922, a statistician's department was established in the state and most of the material cited below was gleaned from reports of that department.⁸ Our own data concerning Elgin have been added. The tables are self-explanatory.

Table 1 contains the admissions of choreic patients to the Illinois State Hospitals during the 12-year period from 1922 through 1933. Table 2 reveals the choreic populations during the same period. Table 3 cites the deaths among the choreic population, with the average ages at death.

It is of interest to note that in Illinois there have been more female choreic admissions to hospitals than male, this in spite of Osler's observation that there is a greater tendency, particularly in certain families, for males to be affected. Most other observers have noted that the sexes are involved equally.

The choreic populations have remained fairly constant from year to year, and one can undoubtedly explain this constancy by the fact that a similar number of cases are admitted annually, while an almost identical number expire each year. Certainly there appears to be no decline in the number of cases in Illinois State Hospitals; indeed the figures would indicate a slight increase, if anything, for the past two years.

Statistical studies regarding the environment of these patients reveal the fact that 84% of the first admissions and 71% of the re-admissions have been from urban communities, with 16% of first admissions and 29% of re-admissions from rural districts.

Since 1900, an arbitrary year which we have adopted because clinical and anamnestic material was quite meager before that time, about 45,000 patients have been admitted to the Elgin State Hospital, including fifty-five cases of Huntington's chorea. Thirty-nine of these cases were typical in every respect, presenting positive family histories of the disease; sixteen offered no definite positive heredity or only a vague one, but were typical from the clinical standpoint. Twenty-nine patients expired at Elgin; six were transferred to other Illinois institutions, five of them expiring there; four were paroled and unaccounted for afterwards; one was deported to another state; ten are now residing at the hospital.

We have completed genealogical studies of most of the Elgin cases⁹ and have traced ten family groups, representing 17 or almost half of the cases, with a positive history of heredity. Though several represent old American families which have emigrated from New York, Ohio, and Pennsylvania, most of the cases consist of recent European immigrants who have come over in large numbers to increase the choreic and potentially choreic population. Many of the family trees represent four and five generations of choreics. Occasionally the law of anticipation is illustrated, when in succeeding generations, particularly in cases where interbreeding of neuropathically and psychopathically tainted stock has occurred, the chorea comes on at increasingly earlier age levels. Table 4 discloses the various races and nationalities represented in the Illinois state hospitals as a whole and in the Elgin group of cases. In addition to the obvious fact that practically no national group is exempt from the disease, one is struck by the large number of German cases in a state which is not particularly noted for a large general German population.

Of the 86 cases admitted to Illinois state hospitals from 1923 through 1933, 75% were, or had been married at the time of their admission to the hospitals, while only 25% were single. The sociological importance of these data is significant and illustrative also of the fact that "anticipation" is unfortunately the exception to the rule ordinarily. In the past all efforts to trace the disease to an original source have proved unsuccessful; from all indications the

"taint" must go back indefinitely, possibly for centuries. Were anticipation the rule, the disease would undoubtedly have been extinct because the affection would have eventually manifest itself early enough to prevent marriage and further breeding of choreics.

Table V gives the ages of the choreics at the time of their admissions to Illinois State Hospitals and also adds the age of onset of symptoms in the Elgin group of cases. It would appear that the fifth decade remains the most common period for both onset of symptoms and hospitalization. Unfortunately, in relatively few cases do the choreic symptoms commence sufficiently early to preclude marriage on their basis alone. The larger incidence of single males in the group is perhaps explained by the well-known phenomenon that women ordinarily marry younger than men.

We shall not attempt to analyze the tables or their significance from a clinical or genealogical standpoint. Our other papers have gone into these matters in detail; it is merely our purpose to offer a bird's-eye view of the present day status of Huntington's chorea in our state. That it continues to offer a social and eugenic problem is obvious. Table VI reveals the choreic population in our state hospitals, with the addition of the Oak Forest Infirmary in Cook County, as of January 1, 1937; these figures do not include the many early cases which are being treated in various clinics, or not at all. They are deceptive also because they do not illustrate the fact that a great many of the choreics are brought into our state hospitals as a last resort, when almost in a terminal state, expiring within a short period of time. Statistics regarding the hospital life of the choreic patients reveal the fact that most of them died within a few months to several years. In the meantime, their progeny, many of whom are potentially choreic, for the disease is regarded as an inherited disorder which appears to affect a larger percentage of individuals than any other, are left to carry on. Often intermarriage occurs with alcoholic, feeble-minded, or otherwise delinquent family stocks, with the resultant production of biotypes which are even more dangerous, eugenically speaking, than the pure choreics. Many of our rural cases have been contributed from certain centers in various counties in the state, one near Elgin, another near Jacksonville, a

third near Peoria, etc. These families intermarry and frequently perpetuate such choreic communities.

Davenport^{5, 6} has emphasized the importance of selecting against choreics in marriage. In 1916 he speculated whether chorea was dying out slowly, or whether it appeared to be continuing unabated, so far as incidence was concerned. He felt that careful investigations of the family histories of immigrants offered the only other possible method of approach to the problem of curbing the menace of such an incidious progressive long-lasting incurable affection. The recent furor created over sterilization might well have beneficial results in the approach to the chorea problem. Again, however, an obstacle is presented in the fact that a few of the children of choreic parents not infrequently escape untainted, and the relatively late onset of the disease in most family groups would provide an almost insurmountable difficulty unless marriage were curbed in all cases for a time at least.

SUMMARY

1. The choreic state hospital population remains more or less constant from year to year because the number of patients admitted is equal, approximately, to the number that die.

2. Equal numbers of male and female choreics with a positive family history have been admitted to Elgin; for the state of Illinois as a whole it appears that there have been more female than male admissions, though the difference is not very great.

3. The age incidence so far as onset of symptoms is concerned includes every decade up to the ninth, except the first, with the largest number of cases in the fifth.

4. Anticipation as mentioned above occurs occasionally, but is not a constant characteristic of the disease; on the contrary, it appears to be the exception to the rule and is to be expected usually when neuropathic stocks are interbred.

5. Because of the relatively late onset of the disease many of the patients are married, particularly the females, and the eugenic problem is made exceedingly more difficult as a result.

6. The nationalities represented by the Elgin and other Illinois state hospital cases include German, English, Scotch, Irish, Slavonic, Scandinavian, Luthuanian, Italian, Jewish, and Negro groups, with many mixtures as well. There is a surprising number of Germans in our cases.

7. About four times as many patients are admitted from urban districts as from rural.

8. Regular choreic centers have been noted in various counties in the state.

9. Although contributing only .1 per cent. to .2 per cent. of the general state hospital population in Illinois, Huntington's chorea presents a chronic problem from the social and psychiatric standpoints, offering no practical prospects of solution at this time.

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TABLE 2. Total—Huntington's Chorea Cases in Illinois State Hospitals

Year	Male	Female	Total
1923	15	19	34
1924	16	23	39
1925	15	24	39
1926	11	17	28
1927	17	19	36
1928	19	17	36
1929	14	17	31
1930	14	17	31
1931	11	16	27
1932	..	..	32
1933	..	..	41
March 15, 1936	..	..	40
January 1, 1937	..	..	45

TABLE 1. Admissions—Huntington's Chorea in Illinois State Hospitals

Year	First Admissions		Re-admissions	
	Male	Female	Male	Female
1922	4	5	1	2
1923	2	5	3	1
1924	5	4	2	1
1925	4	6	1	1
1926	4	5	0	0
1927	4	3	1	1
1928	6	5	2	0
1929	2	3	2	2
1930	1	7	2	2
1931	2	2	1	2
1932	6	3	0	1
1933	3	4	0	0
Total	43	52	15	13

TABLE 3. Deaths—Huntington's Chorea in Illinois State Hospitals

Year	Male	Female	Total	Average Age Male	Average Age Female
				Male	Female
1922	6	4	10	....	....
1923	8	4	12	48.00	48.20
1924	4	2	6	59.50	60.00
1925	3	6	9	51.60	56.10
1926	7	5	12	56.40	56.40
1927	4	3	7	56.20	62.60
1928	4	8	12	58.25	51.12
1929	3	2	5	55.00	51.00
1930	3	4	7	50.30	48.20
1931	5	6	11	48.60	52.10
1932	4	2	6	48.70	59.00
1933	1	4	5	48.00	44.25
Totals	52	50	102	53.195	53.687

TABLE 4. Races—Huntington's Chorea Cases in Illinois State Hospitals—First Admissions

	German		English		Scotch		Irish		Slav		Scand		Lith		Ital		Mixed		Unasc. Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1923	1	..	..	2	..	1	..	..	..	..	..	..	..	..	..	..	1	2	..	7
1924	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	2	..	9
1925	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	4	..	10
1926	2	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	4	..	9
1927	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	1	..	7
1928	1	..	..	..	1	..	1	..	1	2	..	1	..	..	..	..	2	2	..	11
1929	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	2	..	5
1930	1	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	3	..	8
1931	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	4
1932	1	..	..	1	..	..	..	..	..	..	1	..	1	..	..	..	2	2	1	9
1933	3	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..	1	7
Total	7	7	..	2	2	1	1	..	4	2	1	2	1	..	1	..	20	23	2	86

Races—Elgin Cases of Huntington's Chorea

	German	English	Swedish	Norwegian	Italian	Colored	Jewish	Polish	Bohemian	Mixed	Unasc.	Total
Pos. Hered.	11	2	3	3	1	2	1	1	1	5	10	39
Neg. Hered.	2	1	1	..	..	0	1	1	1	1	8	16
Totals	13	3	4	3	1	2	2	1	2	6	18	55

TABLE 5. Ages—Huntington's Chorea Cases in Illinois State Hospitals—First Admissions

	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70 up
1923 .....	..	..	..	1	2	1	1	1	1	..	..
1924 .....	..	..	..	..	3	..	2	2	1	..	1
1925	1	..	..	2	1	1	1	2	1	..	1
1926 .....	..	..	2	..	1	..	3	1	2	..	..
1927 .....	..	..	..	1	1	2	1	1	1	..	..
1928 .....	..	..	..	2	2	2	2	..	1	..	2
1929	1	2	..	..	1	..	1	..	..	..	..
1930	1	1	2	..	..	1	2	..	1	..	..
1931 .....	..	..	..	..	1	1	..	..	..	..	2
1932 .....	..	..	..	..	1	1	..	3	1	1	..
1933 .....	..	..	..	..	1	1	1	1	2	..	..
Totals	1	2	5	8	14	10	14	11	11	1	6

Ages—Elgin Cases of Huntington's Chorea

	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70 up	Unasc.	Tot.
Onset Pos. H.....	1	1	4	3	7	7	8	5	1	..	..	..	2	39
Adm. Pos. H.....	..	1	..	2	1	5	13	8	4	3	1	1	..	39
Onset Neg. H.....	..	..	1	5	..	2	4	1	1	2	..	..	..	16
Adm. Neg. H.....	..	..	..	1	2	1	2	5	1	3	1	..	..	16
Totals	1	2	5	11	10	15	27	19	7	8	2	1	2	..

TABLE 6. Huntington's Chorea in State Hospitals in Illinois as of January 1, 1937

Hospital	Male	Female	Unasc.	Grand Total
Elgin	4	6	0	10
Jacksonville	2	5	1	8
Anna	0	0	1	1
East Moline	2	3	0	5
Peoria	1	3	0	4
Chester	0	0	0	0
Kankakee	6	4	0	10
Chicago	1	1	0	2
Alton	1	2	0	3
Manteno	0	1	0	1
Dixon	0	0	0	0
Lincoln	0	1	0	..
Total	17	26	2	45

(Oak Forest Infirmary, Cook County—1 Case)

DISCUSSION

Francis J. Gerty (Chicago): Mr. Chairman, Ladies and Gentlemen: The interesting thing about this paper to me is this: the very great difficulty we encounter when we set out to study what appears to be a very simple problem. Huntington's chorea is an organic disease. The symptoms are quite characteristic and we recognize it as being definitely hereditary. That would seem to indicate that it would not be difficult to trace these cases, to study them and really find out something about them. There is a general disposition to believe that a great many mental conditions are hereditary. Here we have a condition which seems fairly simple to study from the standpoint of heredity and yet the difficulties have been very great. The terminology alone causes us trouble.

One would think that Huntington's chorea would run back to the beginning of scientific medical records as a sort of red ribbon easily picked out. Yet even within the past generation, within the span of most of our lives, cases of this kind were not recognized. Consequently it helps us to appreciate the difficulties we are likely to have with studies of heredity in conditions which are less outspokenly hereditary and which may

not be hereditary at all. My own experience corresponds quite well with that of the authors of this paper.

In the psychopathic hospital where the admission rate has been five to six thousand patients per year during the past ten years, we average five to seven chorea patients of this type per year. It is not always easy to secure the hereditary history. I note from these statistics that in thirty-nine cases they could find hereditary history and in sixteen they could not. That, I think, probably represents a rather high percentage in which the hereditary history could be definitely discovered.

Repeatedly I have seen patients who clinically suffered from Huntington's chorea. It was impossible to get the family history. It is very difficult to gather information from these patients as to the onset of the condition. They tend to deny the movements that they exhibit to the world long after they are plainly manifest.

In our hereditary studies we should study the latter end of human life with as great care as we study the beginning of human life. It is possible that many other organic conditions, if studied in this way, will reveal a hereditary factor.

Roland P. Mackay (Chicago): Does the predominance of German derivation in these patients correspond to a similar predominance of German derivation in the population in Illinois as a whole?

Dr. Falstein (Closing the discussion): I wish to thank Dr. Gerty for his remarks. In response to Dr. Mackay's question. I might say it has been our impression that Illinois is not particularly noted as a state with a predominantly German population as compared with Wisconsin, for example. There have been studies made elsewhere, but we were particularly struck with this predominance in a state not noted for a large German population. I do not have the exact statistics, however, regarding the numbers of the various national groups in the general population of the state.

THE PRESENT STATUS OF THE SHOCK TREATMENT OF THE "FUNCTIONAL" PSYCHOSES

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The Insulin Shock Treatment. The claim is made that the shock treatments have materially increased the recovery rate in dementia praecox. Sakel¹ the originator of the insulin shock treatment, was able to discharge as fully recovered 69% of those patients who received the insulin treatment within six months after their breakdown. In patients whose disease had lasted more than six months the recovery rate was only 18%. If the disease had lasted two years or more the number of recoveries was negligible. The combined recovery rate of all treated cases, regardless of the duration of the disease, was 47.7%. Schmidt and Bersot² summarized, in 1937, the combined experience of the Swiss State Hospitals and, in a series of 495 insulin-treated patients, reported somewhat similar results. The combined recovery rate was 40.4%. Mueller,³ Wortis,⁴ Young and Boucek,⁵ Lemke,⁶ Kueppers,⁷ Ederle⁸ and Ross⁹ were more conservative in their estimates but agreed that "we have obtained a potent agent to deal with dementia praecox" (Ross). Our own experience with a series of schizophrenic patients treated at the Psychiatric Institute of the University of Illinois coincides with that of the more conservative authors. We obtained 37.5% full recoveries and 12.5% social recoveries in patients treated within the first six months of their breakdown. Our combined recovery rate of all insulin-treated cases (recent and old) was, however, no more than 24.1% full recoveries and 11.1% social recoveries (table 1). Obviously in order to secure optimal results treatment must be given during the early stage of the disease.

By full recovery is meant a condition in which the patient has obtained good insight and resumed his occupation in the community. The term "social recovery" implies that while insight is good, work has not been resumed, or work was resumed but insight is missing. One of our "socially recovered" patients, e.g., is occupied and doing satisfactory work but still

thinks a mysterious power is influencing her. Another patient has dropped his delusions but cannot be induced to look for a position.

The Metrazol Shock Treatment. In 1935, Meduna^{10, 11} produced convulsions by means of intravenous injection of a 10% solution of metrazol. His therapeutic results paralleled closely those obtained with the hypoglycemic shock produced by insulin. He obtained upward of 80% remissions in patients with less than six months' duration of the disease. Like Sakel he insisted that the earlier the treatment is instituted the better results can be expected. Broussau,¹² Friedman,¹³ Finkelman¹⁴ and others made similar claims. The results of our own series of 69 patients with dementia praecox are less striking than reported in the literature. The recoveries secured in patients with less than six months' duration of the disease amounted to slightly more than 40%. Our combined remission rate in both recent and old cases was 23.3% full recoveries and 8.7% social recoveries (table 1).

Therapeutic Versus Spontaneous Remissions. It is well known that a number of patients with dementia praecox tend to recover spontaneously. Mayer-Gross¹⁵ studied 294 schizophrenic patients 15 years after discharge from the Heidelberg clinic and found 30% well adjusted and working. Fuller¹⁶ reported on 242 schizophrenic patients investigated ten years after discharge from the state hospitals of New York. About 35% were continuously adjusted in the community. Braatoy¹⁷ obtained a remission rate of about 20% in a series of over 200 cases of dementia praecox re-examined five to six years after discharge from the Oslo clinic. Lemke¹⁸ studied 132 patients about two years after discharge and found 14% only adjusted and working. Of 128 schizophrenic patients of the Psychiatric Institute of the University of Illinois who were discharged during the past five to six years 17.2% were adjusted and working in the community (table 2).

From this brief survey of the literature it is obvious that the spontaneous remission rate varies between about 15 and 35%. An analysis of the above reports indicates that those authors who investigated their cases from 10 to 15 years after discharge obtained higher remission rates than those who made their investigations after a shorter interval. This fact will appear less strange if the spontaneous remission curve is

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traced over a number of years. Fuller¹⁹ has shown that the curve rises to its highest peak during the first year and henceforth falls steeply and progressively during the subsequent years. According to his tables 13.9% of the patients recovered during the first year, 3.9% during the second, 1.8% during the third, etc. In the 10th year only 0.4% recovered. After 16 years, the combined spontaneous recovery rate among 2,481 patients with dementia praecox was 25.0%. It is evident that although only a small percentage was added yearly after the first year, and fractional percentages only after the third year, the sum total of spontaneous remissions nevertheless continued to increase with the lapse of time. If this yearly growth of the spontaneous remission rate is considered the discrepancy between the percentages of the various authors finds its explanation. Lemke¹⁸ who investigated recently discharged patients was bound to find fewer of them recovered than Mayer-Gross¹⁵ and Fuller¹⁶ who studied their series of cases from 10 to 15 years after discharge.

On the basis of our knowledge concerning the yearly growth of the spontaneous remission rate it would be unfair to compare the therapeutic recoveries obtained after shock treatment with those obtained in an investigation of patients 10 or 15 years after discharge. The shock-treated patients are recent discharges and can only be compared to a group of the same kind. Lemke's¹⁸ and Fuller's¹⁹ series are the only ones in the literature that permit comparison. Lemke's patients were discharged during the two years preceding the investigation, and Fuller made a year by year tabulation for 16 successive yearly discharges. The remission rates after two years were 14.0% and 17.8% respectively. The series studied at the Psychiatric Institute concerned 128 patients who had been discharged from one to six years prior to investigation and might still lend itself for comparison. The remission rate was here 17.2% (table 2). Plainly, Sakel's combined recovery rate of 47.7% and the Swiss rate of 40.4% are palpably superior to the expected spontaneous remission rate. If Sakel's and Schmidt-Bersot's figures are accepted, the shock treatments yield a recovery rate of from 40 to 45% as against one of 15 to 20% in untreated patients.

That the post-therapeutic remission rates obtained at the Psychiatric Institute are so strik-

ingly lower than those reported by the Vienna and Swiss investigators is explained, in part at least, by our perhaps too stringent criteria for "recoveries." As will be pointed out later, in order to be rated as recovered, our discharged patients are not only required to have regained insight and to resume unsupervised occupations in the community; they must, in addition, maintain regular monthly contact with the staff physicians. If the latter requirement is not fulfilled, they are rated as "socially recovered."

Single Versus Combined Shock Treatment.

As mentioned, the rates for full recoveries at the Psychiatric Institute, both in the metrazol and the insulin series, was about 40% in recent cases. The combined recovery rates for both recent and old cases were about 24%. This was an advance over the period preceding the shock treatments when the combined recovery rate was approximately 17%. But the advance amounted to seven per cent. only. The question arose whether the combined recovery rate could not be further increased by more intensive treatment. As a result of this consideration the rotation treatment was introduced in January, 1937. Within the rotation scheme a patient was first placed on one of the shock treatments, let us say, insulin. If he did not recover he was then given metrazol. If the second treatment proved unsuccessful again a third course of treatment was given with pyrexia. Finally, a fourth treatment was administered, usually narcosis with sodium amytal, or a repetition of the metrazol shock. To date 81 schizophrenic patients were rotated through the four stages. The results, as analyzed in table 3, show that of 81 patients treated in the first stage 19 made a full recovery and eight a social recovery. At the end of the fourth stage the full recoveries had increased from 19 to 32, or from 23.5% to 39.5%, the social recoveries from eight to 16, or from 9.9% to 19.7%.

The literature contains a few reports in which patients were placed first on metrazol and then on insulin and vice versa. Angyal and Gyarfás²⁰ and other authors reported occasional combined treatments. But thus far systematic rotation was only practiced at the Psychiatric Institute. Since we were able, by means of multiple treatment, to increase the remission rate from 23.5% to 39.5% we feel that rotation from treatment to treatment is the method of choice.

Shock Treatments in Conditions Other Than Dementia Praecox. Both the insulin and metrazol shocks are plainly nonspecific treatments. Hence, they can be logically applied to any condition which lacks a specific etiology. At the Psychiatric Institute the treatments are administered in all conditions which do not fall into the group of the organic brain diseases (dementia paralytica, senile psychosis, arteriosclerosis, etc.). In our experience, both the manic and the depressed patients respond well to the metrazol treatment. In many instances the depression or the manic excitement are cut short after a few paroxysms. In some patients a single convulsion effected a dramatic emergence from the manic or depressed episode. That the attack is materially shortened by the metrazol treatment is clearly shown by a comparative study of depressive patients with regard to the length of stay in the hospital in successive years. During the years 1934, 1935 and 1936, 39 manic and depressed patients were discharged from the Psychiatric Institute as recovered. Their average length of hospitalization was 148 days. In 1937, the number of manic-depressive patients discharged as recovered after shock treatment totaled 16. Their average length of hospitalization was 42 days.

We treated two patients with alcoholism, one of seven years', the other of three years' duration. Both had spent the past few years in state hospitals, and their brief periods of tentative parole were invariably terminated by alcoholic excesses. The one is at present continually at work since eight months, the other since five months. Both are now consistent abstainers.

We have also treated four severe psychoneurotic patients with good success. All were of the psychasthenic type and sufficiently maladjusted to warrant commitment. They made a good recovery after a few metrazol convulsions. One of the patients relapsed after six months of good adjustment. The remaining three are at work and doing well for now more than six months.

Six patients with postencephalitic Parkinsonism treated with metrazol showed no demonstrable improvement.

Dangers and Complications. The literature shows that of 1,200 patients treated with insulin in this country and abroad, 14 died during treatment. The percentage is 1.2. Of 544 patients treated with metrazol, one died. The per-

centage is 0.4. The inference is that mortality is negligible for metrazol and relatively low for insulin.

The metrazol paroxysm has a tendency to produce dislocations and, at times, fractures. In our series, three patients suffered an avulsion of the greater tuberosity of the humerus. One patient sustained a fracture of the humerus. Mandibular dislocations were frequent and easily corrected. One patient developed a dislocation of the shoulder.

While the complications and dangers of the metrazol paroxysm can be disregarded, those arising from the insulin hypoglycemia demand close attention. During the treatment the patient must be carefully watched. Emergencies may arise which require prompt interference. Laryngeal spasm, Cheyne Stokes breathing, signs of impending cardiac collapse are by no means infrequent. We had several such alarming situations but were able to cope with them by the instant interruption of the shock through glucose. In a few instances the glucose had to be given by the intravenous route. Usually administration by means of the nasal tube was possible and effective.

Even after the hypoglycemia has been interrupted by the administration of sugar, complications may still arise in the afternoon when the patient is removed from the insulin room. The much dreaded "after shock" must be looked for and adequately treated. It happens occasionally that a patient goes into coma several hours after emerging from the hypoglycemia. This complication may be overlooked if the "after shock" appears after retiring.

At times a patient cannot be aroused from the hypoglycemic shock despite adequate doses of sugar given by nasal tube or intravenously. Instances are reported in the literature in which patients could not be awakened for fully two or three weeks.

In view of these dangers and complications a note of warning is in place against attempts to give the insulin shock treatment without adequate experience.

Quality and Permanency of Recoveries. The definition of the terms "full recovery" and "social recovery" is easy enough. The criteria are insight and resumption of unsupervised work in the community. In a full recovery both of these criteria must be fulfilled, and in the social re-

covery, one of them only. But ease of definition does not necessarily imply ease of accomplishment. Whether a patient has recovered, fully or socially, at the time of discharge can be established by the simple expedient of examining him. But whether and how long a patient stays recovered can only be determined if a followup system is in working operation. Except for Lemke⁶ the authors who reported post-therapeutic recovery rates did not supply the data of their followup studies. Presumably such studies were not made or could not be made. Indeed, it is difficult to induce a patient to return for check-ups. Little knowledge is, therefore, available about the permanency of recoveries, and the striking results obtained by the more optimistic workers must at present be considered as initial results.

At the Psychiatric Institute we paid much attention to the problem of the followup investigation. The final solution was the formation of an organization of our former patients. The organization has three main objectives: 1. to promote the economic interests of the patients; 2. to engage in an educational campaign for the purpose of changing the community's attitude to mental patients; 3. to establish a close contact between former patients and the staff physicians. The organization holds twice a month regular meetings at the hospital to which all discharged patients are invited. In the course of these gatherings we have obtained as accurate information as is possible on the quality of recovery. Several patients who were classified as fully recovered after discharge were found to have relapsed into a condition of mere social recovery. We claim that due to our close contact with our discharged patients our figures on recovery rates are trustworthy.

To date, of 32 patients classified as fully recovered three maintained their status for more than one year, nine for more than six months, eight for more than three months, 12 for less than three months.

Of the 16 patients who are rated as socially recovered, seven have thus far maintained their status for more than six months, eight for more than three months and one for less than three months.

CONCLUSIONS

1. The metrazol and insulin treatments of dementia praecox result in a combined full and

social recovery rate which is significantly higher than the results obtained in the spontaneous remissions of previous years, especially if metrazol and insulin are combined in the form of the so-called "rotating treatment," with fever and narcosis.

2. Metrazol and insulin lend themselves to the treatment of conditions other than dementia praecox.

3. Recovery rates are reliable only if an adequate followup system is in operation for the purpose of studying the adjustment of patients after discharge.

4. Since the highest recovery rates are secured if the patient is treated within six months after the breakdown, early treatment is imperative.

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TABLE 1.
Initial and Final Recovery Rates in Patients Treated with Insulin, Metrazol and Combined (Rotating) Therapy.

1. INSULIN					
	No. Cases	Initial Recoveries	%	Final Full Recoveries	%
1-6 mos.	16	9	56.3	6	37.5
6 mos.-1½ yrs.	16	3	18.8	2	12.5
Over 1½ yrs.	22	7	31.8	5	22.7
Total	54	19	35.2	13	24.1
2. METRAZOL					
1-6 mos.	22	15	68.2	9	40.9
6 mos.-1½ yrs.	23	10	43.5	6	26.1
Over 1½ yrs.	24	2	8.3	1	4.2
Total	69	27	39.1	16	23.3
3. COMBINED ROTATION					
1-6 mos.	29	21	72.4	15	51.7
6 mos.-1½ yrs.	23	12	52.2	10	43.5
Over 1½ yrs.	29	8	27.6	7	24.1
Total	81	41	50.6	32	39.5

TABLE 2. Initial and Final Recovery Rates in 128 Untreated Schizophrenic Patients.					
	No. Cases	Full Recoveries	%	Social Recoveries	%
1-6 mos.	29	9	31.0	4	13.8
6 mos.-1½ yrs.	29	7	24.1	3	10.3
Over 1½ yrs.	70	6	8.6	4	5.7
Total	128	22	17.2	11	8.6

TABLE 3. Recovery Rates of 81 Schizophrenic Patients Rotated in Four Stages Through Insulin, Metrazol, Fever and Narcosis							
	No. Cases	Full Recoveries	Per Cent	Social Recoveries	Per Cent	Combined Favorable Results	Per Cent
First Stage	81	19	23.5	8	9.9	27	33.4
Second Stage	50	8	16.0	5	10.0	13	26.0
Third Stage	24	4	16.7	2	8.3	6	25.0
Fourth Stage	6	1	16.7	1	16.7	2	33.3
Combined Results of Total Rotation ...	81	32	39.5	16	19.7	48	59.2

DISCUSSION

Dr. S. N. Clark, Jacksonville: Dr. Low has given us a very admirable review of the metrazol and insulin treatments in functional psychoses, and I can only refer to one or two angles. Certainly one feels that these reports are very promising. The combined treatment of which he spoke is new to me but his figures justify

that sort of treatment. The early reports in regard to the treatment of manic depressives with insulin were not very encouraging and I was glad to hear Dr. Low tell of the results being obtained in that condition with metrazol. His further results in regard to psychoneuroses and chronic alcoholism will be awaited with a great deal of interest. Any treatment that does not go back more than five years must be considered in a trial state and that is particularly true of treatment in psychoses for obvious reasons.

Dr. Low has been frank in speaking of the dangers of the treatment. It seems like drastic treatment to bring about a convulsion or to force the blood sugar down below normal levels. In one of our cases the blood sugar was 91 mg. the morning before treatment and dropped to 38 mg. one hour after 90 units of insulin were given. Two hours later it went to a level too low to read; three hours later it was 26 mg., and one hour after treatment was terminated with glucose the level was 150 mg. Altogether, I think that the dangers are inconsiderable in view of the improvement that has been obtained in this treatment.

We should all like to know why metrazol and insulin produce the effects they do. Quite a lot has been said about the subject. I think we have to take most statements as being surmise, at least that is my opinion. In other lines, however, it has been found many times that a treatment which is empiric and which has been given with decidedly good results, sooner or later leads to that treatment being placed on a rational basis. We hope that that will be true in this case and that favorable results obtained will lead to greater knowledge of the mechanism of the psychoses. One may even hope that instead of merely treating these cases it may be possible to prevent the psychosis.

Dr. J. V. Edlin, Chicago: At the Chicago State Hospital we have treated more than 450 patients with metrazol and a smaller group with insulin. These were not selected patients. It is surprising that with so large a number of patients, our percentages were relatively the same as those offered by Dr. Low. One thing that stood out was the length of time we have found it necessary to keep a manic depressive in the hospital. This was almost the same to the day as Dr. Low's figures.

In addition to the dangers and complications offered by Dr. Low, I should like to add two patients who sustained lung abscesses while receiving insulin, because of the frequent nasal tube feedings. With metrazol, in our first 100 cases four received fractures and dislocations. In our next 360 cases with metrazol, due to the improvement in technic and care of the patient, we only sustained two trivial tears of the supraspinatus muscle.

In studying the permanency of recovery, we are keeping in close contact with the patient.

One factor which we feel is important is that before this type of treatment was instituted, it was noted in our institution that only the epileptic patients had a tendency to group together. Since patients have been receiving shock therapy, those who have recovered or are recovering are beginning to gather into groups.

Another thing that we must not overlook is that prior to the shock therapy, at our hospital three to five patients died every month. They died at the time of their admission because of exhaustion in the course of the psychosis. Since metrazol was introduced we have not lost a single patient.

AN ATTEMPT AT THE LABORATORY CONTROL OF SCARLET FEVER BY HEMOLYTIC STREPTOCOCCUS CULTURES

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WILMETTE, ILLINOIS

It seems necessary in this discussion to review the work of the first years covered in this paper by the essayist at the Illinois Convention of Health Officers in December, 1935. In that report were stated the fundamental reasons for beginning the work, and the justification for feeling that it was worth while.

Since the etiology of scarlet fever, from the standpoint of bacteriology, is generally recognized to be a beta hemolytic streptococcus, it seemed to me that it was gross negligence not to make use of this knowledge in an attempt to control the disease, particularly when the consequences of infection may be as serious as those resulting from scarlet fever. According to Bailey¹ the general mortality in the state of Illinois has risen from 3.8 per 100,000 covering 1928 to 1935 inclusive, to a mortality of 4.2 per 100,000 for the years 1933 to 1935. This shows a mortality ten and a half times that of poliomyelitis, 1.7 times that of whooping cough, and two times that of diphtheria. The average for the state of Illinois is an incidence of 300 cases per 100,000 population. Bailey¹ feels also that a rational quarantine for scarlet fever would be one which required negative cultures for release of patients, rather than a definite period of time.

Mortality records give only an inkling as to the seriousness of the infection, since by far a greater number than those listed as dying of scarlet fever will go through many years of life handicapped because of its complications. A sound basis for the control of scarlet fever dates back only to the work of Drs. George F. and Gladys Dick,² published in 1921, 1923 and 1924, when they announced the production of scarlet fever and the satisfaction of Koch's laws

in regard to its causation by certain strains of hemolytic streptococci. It seems necessary then to determine the incidence of beta hemolytic streptococci in the throats of patients, contrasts, healthy individuals and those with infections other than scarlet fever.

Burgin and Higgins³ in 1934 found among patients at the Massachusetts eye and ear infirmary an incidence of 43.8%. Cole and MacCallum⁴ in 1918 found an incidence of 11.4% in the throats of patients in measles wards in an army camp. Levy and Alexander⁵ found 77.1% in similar groups and 14.8% in new men coming into service. Brown⁶ after reviewing in 1935 the work of Kuroy on 1,559 cultures of healthy people in the presence of scarlet fever, reported an incidence of 4.2 to 8.1%. Richardson and Knight⁷ in 1929 concluded that after ruling out other upper respiratory infections, the incidence of hemolytic streptococci was only slightly higher than that of diphtheria bacilli. Reichenmiller⁸ in 1926 found 7.7% of children in a cloister in which scarlet fever had occurred showed positive throat cultures. The total average for all of these cases was about 10% positive. Only one in 17 employees of the cloister was found positive, and this woman's husband came down with scarlet fever within a few days. Burgess⁹ reported in 1928 10% positive cultures on clinic patients. Mayer and Lowenberg¹⁰ in 1929 found 60% of 59 physicians and nurses and 57 hospital employees showing positive cultures. Peacock, Werner and Colwell¹¹ in 1932 reported an incidence of 28% in the nurses at Children's Memorial Hospital in the presence of an epidemic. Bernhardt¹² in 1928 reported the culturing of children in a room with four cases of scarlet fever, giving an incidence of 33% positive throats. Lane and Beckler¹³ in 1929 cultured two schools and found an average incidence of positive cultures of 15%. Burgess⁹ cultured 200 children who showed an incidence of 12½%. Pilot and Davis¹⁴ reported 61% positive cultures from the tonsils of children coming in for tonsillectomy, while they obtained positive cultures in 97% of tonsil crypts after removal of tonsils. Seasonal variations in incidence have been reported by many. Pilot, Tumpeer, Helmholtz, and Davis have considered the organisms normal flora of human throats. Ruediger, Cumming, Spruit and Lynch, Blandon, Burhans and Hunter, Burgin and Higgins, and Blake have

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considered the organisms pathological. Bailey¹ states that in a recent survey in Illinois the organisms in 90% of positive throats were demonstrated to be capable of producing scarlet fever, and produced a toxin which was neutralized by the commercial scarlet fever antitoxins. C. M. Burpee¹⁵ reported a variation from 0 to 45% in the incidence of positive cultures in the throats of patients admitted to a pediatrics ward.

My reason for referring rather extensively to the literature is my feeling that it is misleading. Most of the work which supposedly determines the incidence of hemolytic streptococci in the general population or in normal throats has been done on subjects such as hospital patients; institutional contacts of scarlet fever patients; army men at the time when hemolytic streptococcus infections were more prevalent than probably at any other time in the world's history; and those around hospitals.

I am glad to accept support from Bailey¹ who cites my objections to conclusions from this work. His own work, it seems to me, in which 1,300 grammar school children in Illinois were checked with 284 positives, or a little less than 22%, would come near the incidence in this age group.

Besides the incidence of positive throats naturally one of our major problems for the control of active cases of scarlet fever are those who may be convalescent carriers. Kirkbridge, Wheeler and West¹⁶ in 1930 found 50 of 85 patients positive after 30 days. Gordon and Badger¹⁷ in 1934 concluded that two or three weeks was sufficient quarantine in mild weather, basing their opinion practically altogether on the general incidence of scarlet fever, which has proven itself to be a very variable factor. Hoynes and Bailey¹⁸ in 1934 cited the increase in return cases with the drop of quarantine to three weeks, which occurred in Illinois in 1932. With the four week quarantine 4.2% of released patients were responsible for return cases, whereas with the three-week quarantine, return cases went up to 7%. Only 3% of the patients released on negative cultures were responsible for return cases. Feigin²⁷ states that six weeks quarantine was not sufficient to prevent the occurrence of return cases. Gasul and Rhoads¹⁹ found positive cultures in 100% of 81 cases of scarlet fever. Agapi²⁰ obtained 97.7% positive in 173 cases in his series. In our own series of 197 cases from

the Wilmette Health department we have been able to isolate the beta hemolytic streptococcus in every instance.

An attempt in my own work has been during the past six years to learn something about the possibilities of laboratory help in the control of scarlet fever, hemolytic streptococcus throats, and carriers of hemolytic streptococci. In doing this we have required two successive negative cultures for the discharge of a patient or a contact. Whenever possible we have cultured the children in school rooms in which cases appeared, and have isolated those in whose throats hemolytic streptococci were found. Murphy²¹ of Newport, Rhode Island, required negative cultures for discharge from quarantine, but made no conclusions as to results. Koehler²² attempted control in Milwaukee by excluding positive cultures from the schools for a period of seven days. This seems to me to be fundamentally wrong, in that positive cultures on school contacts persisted for an average of 13 days in my series, and it seems rational that if contacts are to be excluded they should be excluded for the period during which the cultures are positive, and not for an arbitrary number of days.

Objections to this type of control are listed on the following basis: 1. It would be impossible to carry it out; but we have been able to carry it out in an under-manned, part time health department. 2. That one cannot require the isolation of patients on this basis because of the impracticability of identifying the hemolytic streptococcus of scarlet fever. This objection, I believe, we have nullified in a community where we have a mixed population of under-privileged, over-privileged and average citizens, with a generous sprinkling of Christian Scientists, without a single refusal in 197 cases and several hundred contacts to cooperate with the isolation regardless of the fact that the voluntary nature of their isolation, the impossibility of determining certainly the specificity of the organism found, and the fact that many of them, including many Christian Scientists, were held far longer than the minimum quarantine period required by the state, and none were allowed to be dismissed before the expiration of this period in spite of negative cultures. The only difficulty that I can see in this regard would be lack of intelligence in selling the proposition to the public on the part of the health officer, or lack of coopera-

tion on the part of private physicians, who can ruin any project for public health officers. This again, I believe, is usually the fault of a health worker who has not first sold the local medical group on the project, explained it to them in detail, and asked their cooperation regardless of their possible conflicting beliefs. I must therefore again acknowledge my indebtedness to the physicians of Wilmette, and especially to the pediatricians of the North Shore for their splendid cooperation during these six years, without which my efforts would have been defeated before they had begun to take root.

The total cases in our series was 197 from May 1932 to the present time and significant data regarding these cases are given in table one and two.

TABLE 1. SCARLET FEVER CASES

Total cultures 805 on 197 cases (Ave. 4).
Variation in days positive—16 to 83 days.
Permanent positives—6 in 197 or 3%.
Total average $32\frac{1}{2}$ days from onset.

Table 2 shows the arrangement of cases according to days from onset to persistently negative.

TABLE 2. SCARLET FEVER CASES

Total 197 cases.

Under 21 days.....	23 cases or 11.7%
Under 28 days.....	78 cases or 39.5%
Over 40 days.....	23 cases or 11.7%
Over 60 days.....	12 cases or 6.0%
Permanent	6 cases or 3.0%

Significant factors seem to me to be that the average persistence of positive cultures from the onset of the disease in these cases over a period of six years, is $32\frac{1}{2}$ days or $41\frac{1}{2}$ days more than our minimum quarantine period. The permanent positives total only 3% of the total number of cases and hardly seem as high in incidence as the persistent carriers of diphtheria. It is also significant to my mind that of these six permanent positives, three were in one family. The minimum quarantine period in our series covered only 39.5% of cases, but those persisting over 40 and over 60 days were few enough, it seems to me, not to influence the practicability of the method. I have been struck in this work repeatedly by the isolated incidents, which have seemed to me in some ways to be of greater significance than the entire series results. One case which was particularly striking was an instance in which a mother on one of the long cases, in which two children in the family had been isolated with a registered nurse on the third

floor of a home, refused, after 70 days of positive cultures, to keep these children isolated from the infant in the family any longer, only to have the infant develop scarlet fever four days after the family was mixed. This seems to me to be adequate proof that the organism in those children's throats was still the beta hemolytic streptococcus of scarlet fever. One other such instance occurred in a case at about 45 days. In the group there was also one return case on a hospital patient, though apparently there was some error in connection with this case. The child was reported as having had two negative cultures, but in reviewing the hospital charts to determine the number of cultures, and the length of time throats persisted positive, the original case in this family was discovered to have shown many, many colonies one day, negative culture the next day, and to have been discharged that day, without a second attempt to get a negative. An infant six months old came down with scarlet fever in that family in a few days.

Table 3 lists cultures on family and school contacts.

TABLE 3. SCARLET FEVER CONTACTS

	FAMILY		SCHOOL	
	pos.	neg.	pos.	neg.
Cultures taken	78	70	331	506
Number of contacts represented .....	..	..	81	369
% Posotive .....	..	..	18	...

The school contacts here are the only ones requiring further notice. 81 contacts out of 450 were positive, and incidence of 18%. Contacts here are regarded as children in the same room with scarlet fever cases. Again isolated facts seem to me highly significant. The first experience in this line came near the beginning of the work. A preschool child attending a play at one of our parochial schools was discovered to have a full-blown rash upon arriving at home Tuesday afternoon. Friday, Saturday, and Sunday following this episode 12 cases of scarlet fever were reported from that school. The following Monday I saw every child in the school, but cultured only those with some evidence of upper respiratory infection on examination. There were 50 children in this group and all of them were immediately sent home. The next morning it was found that nine of these 50 were positive. The parents of these nine children were notified and it was discovered that one of them already had scarlet fever. A second developed a sore

throat and eight weeks later a broken-down cervical lymph node was opened, from which beta hemolytic streptococci were isolated. That child's sister, who was one of the nine, had a sore throat. The other six were isolated and remained positive from seven to 20 days when they were allowed to return to school. No other cases of scarlet fever developed in that school until the following year. It was also striking that the Sister Superior, when given a list of the pupils with positive cultures, spontaneously remarked that three of those children had sat at either side and in front of the child with the scarlet at the entertainment, and that she had seen two of the others walking into the room with him.

It is also significant to me that in no other instance in which we have cultured a room and excluded positive throats during these six years has there been a subsequent case of scarlet fever. On the other hand four cases have developed that were diagnosed in children already excluded from one to 35 days after isolation. There were others among those isolated who developed sore throats and several who were suspect cases.

TABLE 4. CONTACTS OF SCARLET FEVER		
	FAMILY	SCHOOL
Average days to negative.....	13	14
7 days or less.....	50%	40%
Over 14 days.....	33%	40%
Over 30 days.....	16%	10%
Permanent	4%	10%

Table 4 is self-explanatory and again demonstrates the futility of isolating positive throats for an arbitrary period.

TABLE 5. HEMOLYTIC STREP. THROATS		
9 cases—5 to 53 days positive.		
7 days or under.....	2	cases
7-14 days	3	cases
21-30 days	2	cases
14-21 days	1	case
53 days	1	case
Total cultures—42.		

Table 5 includes nine cases of hemolytic streptococcus throats, some of which occurred in families in which other patients had scarlet fever, and it seems to me that isolation of these cases generally is more adequate, since it is purely on a culture basis, than the isolation of scarlet fever in general. Bailey¹ feels that the isolation of hemolytic streptococcus throats is one of the important factors in the control of scarlet fever along with the isolation of carriers. Brewer²³ feels as do many others that most of the hemolytic streptococcus infections including

streptococcus throats are probably different manifestations of infection by the same organism.

I am still unable to produce an adequate series of cultures from normal patients, but table 6 gives the incidence in 151 people with an incidence of 17.9%.

TABLE 6. NORMAL PATIENTS		
or cases	of measles, whooping cough, German measles, etc.	
	Positive	Negative
	27	124
17.9% Positive.		

I stated in my previous paper²⁴ on this subject that I did not consider Wilmette a suitable place to attempt active control. Our children go to school in Kenilworth, Winnetka, Evanston, and Chicago. Children from Winnetka, Kenilworth, Glencoe, Niles Center, Glenview, Evanston and Chicago attend our parochial schools. Our theaters are the last ones between Chicago and Highland Park. Our children attend parties in these other communities, and much family shopping in our community is done in Evanston and Chicago. There is therefore a constant mixture of population, and I feel that the question as to whether this type of control would reduce the actual incidence of diagnosed scarlet fever would be possible only if two groups of counties adjacent to each other, east and west, with similar urban and rural distribution of population in two groups, could be carefully checked for several years, one group using the method of culture control, while the other group used arbitrary time quarantine. Table 7 shows the actual incidence of scarlet fever in Wilmette, Evanston²⁵, Kenilworth and Winnetka²⁶ from January 1, 1933 to the present time.

TABLE 7. SCARLET FEVER			
YEAR	Actual Cases		
	WILMETTE	EVANSTON	KENILWORTH WINNETKA
1933.....	20	131	21
1934.....	48	104	45
1935.....	47	133	38
1936.....	16	103	28
1937.....	46	136	20
1938.....	14	113	20

It is interesting to note that the low incidence in Wilmette in 1936 was accompanied by very low virulence, and also by a very short time persistence of the organisms. Only one case in 16 persisted over 28 days, and four were negative in 20 days or less. It is also rather remarkable

that it is only in the last two years that we have had any permanently positive throats.

In table 8 the incidence is calculated per 100,000 population for each year, and for the total period.

TABLE 8. SCARLET FEVER CASES

YEAR	Per 100,000 population.		
	WILMETTE	EVANSTON	KENILWORTH WINNETKA
1933.....	125*	192	140
1934.....	300	153*	300
1935.....	293	195*	253
1936.....	100*	151	187
1937.....	287	200	133*
1938.....	87*	166	173
Total	1190	1060	1150

It becomes immediately apparent that the incidence in Wilmette has not been reduced by our method of control. Three of the years Wilmette has had the lowest incidence, two years Evanston has had the lowest incidence, and one year Kenilworth and Winnetka were low. The total incidence as noted is slightly higher for Wilmette than for either of the other two.

As to culture methods, we have used streaked and poured blood agar plates, with 1 cc. of blood in 15 cc. of standard agar, with peptone, sodium chloride, beef extract, sodium hydroxide and agar, adjusted to a pH. of 7.2 and recognizing as positive only plates showing beta hemolytic streptococci. The help of the technicians at the Evanston Hospital laboratory and the Evanston Health department is acknowledged in this work.

In summarizing:

(1) We have been unable in our location to reduce the incidence of scarlet fever below that of communities adjacent to ours by requiring negative cultures from cases and contacts for release.

(2) We have attempted to determine the average period during which cases of scarlet fever will persist in showing beta hemolytic streptococci in the nose and throat, and have tabulated these according to the time of positive cultures.

(3) We have attempted to isolate family and school contacts of scarlet fever patients on a basis of throat cultures for beta hemolytic streptococci, and have determined the time for which such contacts are likely to persist positive.

(4) We have tabulated the time during which a series of hemolytic streptococcus throats have persisted positive to culture.

(5) We have listed a short series of cultures on fairly normal patients in an effort to determine the incidence of hemolytic streptococci in the general population.

DISCUSSION

Dr. W. W. Bauer, Chicago: Dr. Seifert's paper with its extensive bibliography does not leave a great deal for an ex-health officer to comment on. As you are all aware, one of the most knotty problems in your whole experience is the control of scarlet fever. I can remember in 1921 and '22 when we had a big outbreak of scarlet fever in the city of Milwaukee. We tried restricting the attendance of children under sixteen at the motion picture theaters. All we succeeded in getting was a resolution on the part of the motion picture operators and no decrease in the incidence of scarlet fever. Within the past two months there have come to my desk the health bulletins from two of our state health departments. The state health department of Oregon in the effort to control the scarlet fever situation has tightened up its restrictions and lengthened its quarantine period. In practically the same mail came another bulletin from the state of Iowa liberalizing the quarantine regulations and shortening the arbitrary period of quarantine. I think that is symptomatic. I think it means that we don't know yet what is the actual length of time we ought to quarantine scarlet fever. I feel sure you all have had such experience as befell me when I was health officer of Racine, Wis. We admitted to the hospital the oldest child of our very best friend in the community. There was at home a little baby. We held that oldest boy in the hospital for the minimum quarantine period. We then made every investigation that we could except throat cultures. We made a blood count. He had no leucocytosis. We examined him with the utmost care for the presence of discharging lesions or evidence of inflammation in the nose, throat and ears, and we found absolutely nothing. We allowed him to go home and on the fourth day his little sister came down with scarlet fever. She was an infant who had been scrupulously guarded against exposure and there was not the slightest doubt that this was a secondary case, and that our efforts to safeguard that family had been utterly futile.

We have tried the control of scarlet fever in the schools, not only by culturing the throats of the contacts but, before the culture method had been developed, we tried in the city of Racine the taking of temperatures in the schools. When a case of scarlet fever was reported out of the school room we took the temperature of every child in that room for three days. That was quite a chore, but we got a hospital thermometer rack and two dozen thermometers and the necessary accessories and we packed four bags equipped for that purpose and they were sent out into the nursing district when and where occasion appeared for utilizing them. We sent home numbers of children with a slight rise in temperature. We sent them home if their temperature exceeded 99.6 by mouth. We think we got the jump on some of these cases. Out of those cases we got a considerable number and the work was just

in its midst when I left there; they were never tabulated, as far as I know. But I do know we got quite a number of those cases. A number of them came down with scarlet fever after they had been sent home. We think we got them out of the class room perhaps 48 hours earlier by that means and thus saved some secondary cases.

If now, as Dr. Seifert has pointed out here—and also Dr. Bigler in his paper—we can use the culture method in addition to the other methods, it may point the way for more successful control of scarlet fever and a better basis for determining the quarantine period.

We are in an unsatisfactory state at the present time when two equally experienced and competent state health officers take diametrically opposite positions on scarlet fever at the same time. It seems to me at least a commentary on the unsatisfactory state of our knowledge of this disease which, as Dr. Seifert pointed out, exceeds in mortality some diseases about which we make a great deal more fuss. Scarlet fever from both a public health and clinical standpoint, remains I believe, one of the most dangerous and tricky of the contagious diseases.

Dr. P. A. Steele, Decatur: I have had experience with some of these cases on follow-up work and the thing I find best is 25 per cent of guaiacol and glycerine.

Dr. F. S. Needham, Oak Park: You have been talking about hemolytic streptococcus cultures. Some of you say they run four, five or six weeks. I have seen them run for 70 or 80 days. Is there anybody trying to do anything to shorten the period between the time that the person gets exposed to the disease and the time they become free from scarlet fever or from the hemolytic streptococcus? I have had that experience. The doctor sees the patient until the temperature is normal and the rash is gone and he says to the family, "Well the kid is all right. When the health department lets him out, that is all right." What is he doing to get clear of this hemolytic streptococcus? Is there any treatment that is going to shorten it? Some say, give them sunshine. It works, too, on some of these cases where they drag along. Others use just ordinary salt water for a gargle, a teaspoonful to a glass of water, and some of them use a carbolic solution, and that seems to clear them up. But the vast majority don't do anything; they wait until Nature does the job for them.

Dr. Seifert, in closing: As to Dr. Gowen's question about contacts at home, one being sent home and the other members of the family in relation to isolation, we have attempted to culture the other members of the family also. If they are negative we isolate the children in one room, and one individual only is supposed to attend that child. Now, naturally, when you do a thing of this sort you must, if in these few cases they stay positive for a fairly long period but are perfectly well, start letting them out or letting them in the back yard to play when the rest of the children are gone. I don't think it has made any difference because we have repeatedly checked the other children in that family and they don't seem to get positive. Then, as regards

the permanent cases and the permanent carriers, after a while we naturally have to let them go. On the other hand, maybe we are in the same position there as with diphtheria. Dr. Ailes thought that 3% was quite a few. There just as many diphtheria throats that will stay positive as that, Dr. Ailes.

Dr. Ailes: Yes, but we have a virulence test.

Dr. Seifert: That's right. We are fairly sure in most instances the organism of diphtheria, if it stays in that individual's throat long enough, will become avirulent. I think it is only logical to assume that, after I have kept one of these youngsters out eight or nine weeks he has probably become avirulent, too. The organism probably is not very virulent any more. That is just an assumption. That I can't prove, of course.

Then, the other question that came up was, Do we keep them out of school all the time? Yes, I have on occasions. It happens that our permanents have been preschool but the others I have kept out of school for 70 to 80 days. I don't believe anyone has ever demonstrated that 70 or 80 days in or out of the grade school has ever made any difference in the future life of any individual. In other words I think we can ignore that. I don't believe it makes any difference at all; and, if by doing this sort of work we have prevented even a few cases, I believe it has a lot more than made up for the time that is wasted. It is true the teachers consider any particular lesson extremely important; actually, it is not important at all, not an individual lesson.

Dr. Ailes: Does it make any difference in the life of the health officer in keeping them out that long?

Dr. Seifert: Yes. The health officer has to sell it, doesn't he? But he can sell it. I think I have proven that it can be sold to the public, and that in a community where there is a rather high percentage of Christian Scientists. I have had Christian Scientists out this spring for eight weeks, and I have had several cases of scarlet fever in Christian Scientists that hung on for six or seven weeks at the time of our three-week quarantine in the state, and I have never had one refuse it. If you sell it to them without trying to say, "I have a hammer and I will hit you with it if you don't do what I say," I think you will get by beautifully. In several hundred contacts I have never had a refusal in the family cooperating on the thing, and I think that is proof that it can be done. Whether it is of value remains to be proven.

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END RESULTS IN THE TREATMENT OF CHRONIC SUPPURATIVE OTITIS MEDIA

GEORGE E. SHAMBAUGH, JR., M. D.

CHICAGO

The treatment of chronic suppurative otitis media has three aims which are, in order of their importance:

A. To eliminate the danger of intracranial complications.

B. To improve and preserve the hearing.

C. To obtain a dry ear.

In analyzing the results of treatment, 100 cases of chronic suppurative otitis media seen in practice the past five years were divided into

four groups according to the abnormal condition present.

Group 1 (31 cases) comprised the cases with the central type of perforation. The characteristics of this group were as follows:

1. The perforation was confined to the pars tensa, and the annulus was usually intact.

2. The middle-ear was lined by mucous membrane (and not by skin).

3. The discharge was mucoid. In 84% it was odorless and in 16% with a foul odor when first seen, the odor disappeared after the first treatment.

4. Nearly all of this group began with an acute otitis media during a severe infection in early childhood, scarlet fever in 65%, measles in 9% and influenza in 9%.

The treatment of Group 1 consisted of dry wipes followed by the insufflation of boric acid powder or of Sulzberger's boro-iodine powder. Occasionally when the discharge was profuse or foul at the beginning, boralcohol was used, changing to the powder at the second visit. No ears in Group 1 were operated upon.

The end results in Group 1 were as follows:

A. There were no complications. We should expect this, since the persistent discharge in this group is due to continued irritation of the middle-ear mucosa by saprophytic infection and debris from the external canal.

B. The hearing was re-checked after the ear became dry in 17. In seven it was unchanged, in six definitely improved, and in four more, improved with the use of an artificial drum membrane; in other words, the hearing was definitely benefited in ten out of 17 of this group.

C. The ear became dry in 85% of Group 1 after an average of three treatments. In 15% there was a slight odorless mucoid discharge in spite of a series of treatment.

Group 2 (56 cases) was the largest group and comprised those with cholesteatoma formation in the attic. This group was further subdivided into the secondary cholesteatomas (36 cases) and the genuine cholesteatomas (20 cases).

The secondary cholesteatomas were characterized by:

1. The condition was secondary to an acute otitis media during a severe general infection in early childhood, scarlet fever in 52% and measles in 19%.

2. The perforation was large and included often both the pars tensa and pars flaccida.

3. Skin instead of mucous membrane lined part of the middle-ear and extended into the attic.

4. The discharge was purulent rather than mucousy and foul even after one or two treatments.

5. Irrigation of the attic with warm alcohol through an attic cannula produced flakes and lumps of cholesteatoma.

6. The treatment of secondary cholesteatoma consisted in mechanical cleansing of the cholesteatoma cavity by attic irrigations in 25 of the 36 cases with the following results:

A. A fistula into the horizontal canal complicated seven of these 25 cases but in each case a dry ear resulted from attic irrigations alone so that surgery was not indicated. One case had a serous labyrinthitis which subsided soon after the attic was cleaned out. Two cases had dead labyrinths as the result of an old suppurative labyrinthitis.

B. The hearing was unchanged in 11, substantially improved in nine and in four of these the hearing was markedly improved.

C. A dry ear was obtained in 23 cases after an average of three attic irrigations. One case did not return for treatment and one case had a slight odorless mucoid discharge from the eustachian orifice after the cholesteatoma cavity had been cleaned out.

In 11 of the secondary cholesteatomas surgery was recommended because of the failure to obtain a clean, dry, odorless ear after a series of attic irrigations. One patient went elsewhere for her operation. In one an ossiculectomy was done, a remnant of the malleus being removed to allow access to an accumulation of cholesteatoma in the attic. In nine cases a classical radical mastoidectomy was done. In each case a large cholestatoma cavity was found extending back into the antrum: a cavity too large to clean out by attic irrigations. The results in these patients operated upon were:

A. Two cases were found to have a fistula of the horizontal semicircular canal. One case developed a postoperative perichondritis of the auricle which healed without deformity.

B. The hearing after the radical operation was re-checked in five and was unchanged in one, improved in two and definitely worse in

two. In other words, the hearing has a better chance if the cholesteatoma can be controlled by attic irrigations alone than after a radical mastoidectomy.

C. A dry ear resulted in every case operated upon.

Of the 56 cholesteatoma ears, 20 were genuine cholesteatoma. These cases were characterized by:

1. The perforation was limited to the attic, the pars tensa being intact.

2. The onset was insidious, no case beginning with an acute otitis during scarlet fever and measles.

3. The discharge was foul and purulent.

4. Attic irrigations produced flakes and lumps of cholestatoma.

Of these 20 genuine cholestatomas, 12 were treated by attic irrigations alone with the following results:

A. One patient had a dead labyrinth as the result of an old suppurative labyrinthitis.

B. The hearing was unchanged in two and substantially improved in ten, with a marked improvement in six of these ten.

C. A dry ear was obtained in each case after an average of four attic irrigations.

Surgery was advised in eight of the 20 genuine cholesteatomas because of the failure to obtain a dry ear after a series of attic irrigations. One patient went elsewhere for her operation. One patient is unable to make up her mind. Six were operated upon, the Bondy modification of the radical operation being used, with the following results:

A. Two patients had a fistula of the horizontal canal and one of these also had exposure of the dura and an exposure of the facia nerve by the cholesteatoma, but facial paralysis did not develop.

B. The hearing was unchanged after operation in two cases and definitely improved in four, being very much better in three of these four. In no instance was the hearing worse after the Bondy operation.

C. A dry ear was obtained in five cases. In one patient there is a slight persistent odorless mucousy discharge from mucous membrane which has regenerated in the region of some old mastoid cells.

Group 3 (seven cases) comprised the patients with chronic suppurative otitis media due to

chronic osteitis and can be subdivided into two groups—those which followed scarlet fever and those which followed what appeared to be an ordinary otitis media.

Those following scarlet fever (four cases) were characterized by:

1. A large central perforation.
2. A thin, purulent, very foul discharge which remained foul in spite of prolonged local antiseptic and cleansing treatment.
3. At operation (radical mastoidectomy done on three of the four) an area of granular, softened bone was found around the antrum. In some cases this bone was discolored (dark brown or black) and in all cases it had a foul odor.
4. A dry cavity resulted in each of the three patients operated upon. The fourth case was lost track of.

The second group of three cases of chronic osteitis following an acute otitis media was characterized by:

1. A tiny pinpoint central perforation such as occurs in an ordinary acute otitis media.
2. A mucousy discharge, odorless in one, foul in one case.
3. Periods of remission with cessation of discharge, followed in a few weeks by exacerbations with headache and pain and a recurrence of discharge without any accompanying upper respiratory infection.

One of these patients had a radical mastoidectomy which resulted in a dry cavity. One patient had a simple mastoidectomy and there is still a slight mucoid postaural discharge after six months. In both cases granular softened bone was found around the antrum and extending medially toward the internal auditory meatus along the posterosuperior angle of the petrosa. The third patient was operated upon elsewhere.

Group 4 (six cases) comprised a miscellaneous group. There were two postoperative radical mastoidectomies, done elsewhere, with a persistent foul discharge. In one an atresia of the canal had resulted in an accumulation of cholesteatoma and a few irrigations yielded a dry ear. In the other the radical cavity was filled with infected granulations with no tendency to epidermize. Removal of the granulations and application of a Thiersch graft resulted in a dry ear.

Two patients had an allergic otitis media. Both had a chronic mucopurulent discharge from

the nasal passages, sinuses and bronchi, with many eosinophils in the nasal secretions. Both were allergic to wheat. In each case the drum membrane perforation was central and the discharge was extremely mucousy and failed to respond to prolonged local treatment.

Finally, there were two patients with tuberculous otitis media. The diagnosis of tuberculosis was made on the painless onset of a thin serous discharge, on finding pulmonary tuberculosis by a chest plate, and on demonstrating tubercle bacilli in the smear. One patient had a radical mastoidectomy done elsewhere. One patient was referred to an internist for treatment of the pulmonary infection.

SUMMARY

Out of 100 cases of chronic suppurative otitis media seen the past five years, conservative treatment was employed in 74, while surgery was recommended in 26 and carried out in 20. The end results were as follows:

A. There was no mortality.

B. The hearing was definitely improved in 59% of those treated conservatively. The hearing was worse as often as it was improved after the classical radical mastoid operation. The hearing was definitely improved in 67% after the Bondy modified radical mastoid operation and was never worse after this operation.

C. A dry ear was obtained in all but 12 of those who reported back for treatment.

122 South Michigan Avenue.

DISCUSSION

Dr. Joseph C. Beck, Chicago: Dr. Calloway and I made an agreement, although we did say we could deviate from that agreement and I am going to do so, that I would discuss the pathology and conservative, or rather non-surgical treatment and Dr. Calloway would discuss the surgery. The deviation I want to make is to compliment the Section and Dr. Shambaugh, and particularly to stress the demonstration of what a colored photograph can do in helping us to illustrate surgical procedures. Even though you may not see in the depth of the cavity all the details, it certainly gives one a fine idea of what is being done.

I want to discuss things that were, perhaps on account of time, omitted. I am sure Dr. Shambaugh is familiar with the use of x-ray in the diagnosis of mastoid disease. As to cholesteatoma occurring purely following retracted fistula of the attic extending into the antrum, we know that is not entirely the case in many instances. The cholesteatoma extends beyond this area. That is the reason I feel a surgeon should not approach a case without the idea of changing his procedure if necessary. We cannot always say at the

beginning that we are going to do a Bondy or a modified operation. Tuberculosis is mentioned, but the nasopharynx and the influence of that on possible recurrence or exacerbation is also recognized but not mentioned by Dr. Shambaugh.

The classification of cholesteatoma is excellent as divided by him. The deviation in the pathologic entity is a dermal type of epithelium.

We operate for the prevention of the spread of disease into the labyrinth, the facial nerves and intracranial complications. I missed completely any reference to granuloma forming into tumors. As to polyps: surely 100 is a small number and no doubt he did not find polyps. That is an important thing—important in the management.

Lues is another disease that will not be amenable to surgery in this area. There are cases of otitis media that can definitely be shown to be luetic, and certainly they should be mentioned in this connection.

Regarding conservative treatment: How many radical mastoid operations of the early days can be compared with those of today? Even though all those operated upon were known? The hearing is most important to the patient. They do not think of the danger of intracranial complications. I have cases that are not thankful because I cured them of suppuration but they are deaf, and most of those on whom a radical operation has been done have a drop in hearing compared to the simpler operations. We see less and less radical work done because of the improvement in surgery. So far as choosing one thing or another in the type of treatment, aside from irrigating, capillary suction is a great aid. As to remedies, powder is the thing. At the International Congress in Budapest forty years ago boric acid was recommended as a panacea for the treatment of chronic suppurative irritation of the ears, and it is the most effective thing in local treatment today. It is true we have found boric acid mixed with iodine to have an advantage over simple boric acid.

Dr. Thomas C. Galloway, Evanston: Dr. Shambaugh has given a very satisfactory presentation of this subject. If one can visualize the abnormal condition he will know how to treat it. His classification is very good but it is difficult to classify such cases and it cannot always be done except in retrospect. In his Group III cases of chronic osteitis in which there may not be destruction of the drum, a considerable number of younger patients can be cured by a simple mastoid operation. I have been doing that as routine in younger patients, and I think satisfactory results have been obtained in a high per cent. of cases. If a simple mastoid fails a radical can always be done. In such a case—a "black mastoid"—I recently shelled out an intact cystic mass, completely blocked off and filled with degenerated blood pigment. I think we should try a simple mastoidectomy more often than we do.

We all know that some years ago we went through a period of many radical mastoid operations but we have fallen into a period of complacency since then, which seems not to be justified. At Cook County Hospital we see bad end results—brain abscess, sinus

thrombosis, and other complications from neglected chronic mastoiditis and I think it should be emphasized that cholesteatoma which do not respond to conservative measure should be operated upon. It is frequently impossible to tell how great the extension is with a cholesteatoma and one can plan the surgery previously but must modify the plan as a good general does as the battle advances.

Other treatments have been mentioned for the chronic cases. One we have been using at County is five per cent. urea and 95 per cent. alcohol and we have found a good many ears in which these cholesteatoma masses were dissolved out with such irrigations.

Petrositis should be mentioned as a cause of chronic running ear.

Dr. George E. Shambaugh, Jr., Chicago (closing): Limitation of time prevented any mention of x-ray in the diagnosis of cholesteatoma. X-rays are used in any case that does not respond to conservative treatment, and often helps to show a large cavity which you could not hope to clear up by conservative treatment. Polyps were present in all types of cases. We removed the polyps and with treatment the ear cleared up satisfactorily. A polyp does not mean the type of ear that requires surgery. I think it should be emphasized that two-thirds of these cases of cholesteatoma respond to conservative treatment.

None had any evidence of involvement of the apex of the petrous pyramid. In two of the cases of chronic osteitis the disease extended posterior to the labyrinth and that, strictly speaking, is a petrositis. None of the cases had disease of the petrous apex.

"INDEMNITY INSURANCE"

The House of Delegates of the American Medical Association at its recent special session approved "cash indemnity insurance" as a method of paying medical costs. Unthinking exponents of socialized medicine may endeavor to twist this approval into a reversal of policy. There are, however, basic differences in the most vital points of the two systems.

Practically no one—and certainly not the American Medical Association—has ever opposed the *payment of medical bills through insurance*. The medical profession has objected most strenuously and continues to object to the *compulsory wholesale purchase and retailing* of medical service to patients by an insurance company, government agency, or any other organization or individual. This objection rests on the proof afforded by vital statistics that during this process of purchase and retailing the medical service is adulterated by politics and depreciated by administrators until it loses much of its value as a protection of the public against disease and death.

Sickness insurance in most countries arose out of systems of contract practice, the administrators of which wished to keep control of the medical service. Politicians were quick to see that service benefits could be sold to voters unable to judge their value for greater political assets than could cash benefits. In the most commonly advocated plans of voluntary and compul-

sory sickness insurance, premiums are collected in cash and then transformed within the insurance administration into service benefits for the insured. All other systems of insurance collect premiums and pay benefits in the medium of exchange. The two sides of the balance sheet are then written in the same units. It is much more difficult to tamper with the bookkeeping for political purposes or to deceive the sick as to the benefits received than in systems in which receipts are counted in cash and benefits are delivered in an unmeasurable service. Indemnity insurance collects the premiums in cash and pays cash to the insured on a definite scale in accordance with the economic losses suffered from sickness.

There would be fewer complications and far less red tape in such an indemnity system than in one with service benefits. Free choice of physician would be automatic. Restrictions on prescribing and other phases of treatment would be unnecessary, as there would be no need to deceive the patient as to the quality and extent of the service he was receiving.

This is not a proposal for an untried experiment. Such a system is in almost universal use by commercial insurance companies. It has been introduced with success into some industrial plans. It is the plan on which old-age, unemployment, and all other forms of social insurance are conducted. There is a decided trend in this direction in even the compulsory systems, as shown by certain features of the French and Swedish sickness insurance plans; both of these, however, are still more or less hybrids of the indemnity and service systems. They retain so many of the evils of the latter, aside from their governmental, compulsory feature, that they cannot be offered as patterns to follow.—*Jour. A. M. A.*, Oct. 8, 1938.

SENSITIVITY TO RABBIT SERUM

Aaron Brown and Philip H. Sechzer, New York (*Journal A. M. A.*, Oct. 8, 1938), performed intradermal and conjunctival tests with rabbit serum on 101 allergic patients. One person gave a systemic reaction to the conjunctival test, and the increasing use of rabbit serum prompts the authors to urge caution in the administration of this agent. The conjunctival reaction, they feel, is a good indicator of general sensitivity, and while fewer persons may be sensitive to rabbit serum than are sensitive to horse serum, the same care should be used with rabbit as with horse serum. The tests with rabbit serum gave sixty-nine negative intradermal reactions, twenty-two flare reactions, six 2 plus reactions, two 3 plus reactions and two 4 plus reactions. One person gave an immediate positive intradermal and conjunctival reaction, followed within five minutes by a systemic reaction, with urticaria angioneurotic edema and asthma, requiring repeated injections of epinephrine for relief. These symptoms persisted in a mild way for several days, requiring the continued use of ephedrine, augmented by occasional administration of epinephrine.

In the case of bald-headed men, it's hair today and gone tomorrow.

Book Reviews

TRAUMA AN INTERNAL DISEASE. By Frank W. Spicer, M. D. 43 illustrations. Philadelphia-London-Montreal. J. B. Lippincott Company. 1939. Price \$7.00.

This work is intended as a basis for medical and legal evaluations of the etiology—pathology—clinical processes—following injury. The author warns the reader that the present volume is in no sense a book on traumatic surgery. The whole purpose of the work is to present a careful study of the role of trauma as an etiologic factor in the causation of disease of the viscera and bodily structure, and a discussion of the etiology, pathology, clinical processes, and end-results of serious or apparently trivial injuries. A discussion of fractures open wounds or traumatic surgery, or occupational diseases is included only to the extent that they may pertain to posttraumatic disease.

THE TREATMENT OF FRACTURES. By Charles Locke Scudder, A. B., Ph. B., M. D., F. A. C. S., Consulting Surgeon to the Massachusetts General Hospital; Formerly Assistant Professor of Surgery at the Harvard Medical School; Fellow American Surgical Association; Member of the American Society of Clinical Surgery. Eleventh Edition, Revised. 1209 pages with 1717 illustrations. Philadelphia and London: W. B. Saunders Company, 1938. Cloth \$12.00 net.

This work is intended particularly for practitioners and students of medicine and should help them to understand the great importance of a broad and flexible attitude toward fracture problems. It should be remembered that details of treatment change rapidly to keep step with the progress in medicine.

In order to meet the rapidly changing conditions and include all the many advances it was necessary for the author to rewrite the book completely. All obsolete methods have been deleted; new methods of diagnosis and treatment have been added as well as hundreds of new illustrations.

The fact that this work has gone through eleven editions in quite rapid succession speaks volumes in its favor. This work should be in the library of every up-to-date surgeon and physician.

SCARLET FEVER. By George F. Dick, M. D., and Gladys Henry Dick, M. D. Chicago, Illinois. The Year Book Publishers, Inc. 1938. Price \$2.00.

In this new monograph—the only available book devoted exclusively to scarlet fever—Doctors Dick and Dick submit to the medical profession a definitive report of the results of their three decades of work on the disease. This volume is one of the indispensable basic references on contagious diseases.

Plates in full color show points of diagnosis, treatment and interpretation of skin tests so clearly and definitely as to leave no possible room for confusion. The ghost of the difficulty of diagnosing scarlet fever is laid. The methods of skin-testing and preventive immunization recommended are those that have proved

most effective. In treatment, every detail of non-specific as well as specific therapy is given. The role of sulfanilamide in scarlet fever and its complications is discussed. Allergy is the subject of a brief, clear chapter. Public health aspects are, of course, stressed with details of how to control outbreaks in the shortest possible time, with least hardship and cost to the community, and with full answers to such questions as length of quarantine, what to do about the family and other contacts, the immune carrier, and how best to control epidemics in families, schools, institutions and communities.

Two features of the text, in addition to the color plates, will appeal to practical physicians. One is the arrangement. Most of the space is allotted to clinical aspects; and the facts on symptoms, varieties of scarlet fever, complications, diagnosis and prognosis, treatment and skin tests and prophylaxis are segregated so that the practitioner can find what he wants quickly without getting involved in technical details. All the material which the teacher, laboratory-man and research worker need is set off in separate chapters on preparation of scarlet fever toxin, specificity of hemolytic streptococci, allergy, antibacterial immunity, local immunity and oral immunization.

CONTROL OF CONCEPTION. By Robert Latou Dickinson, M. D. Second edition. Baltimore. The Williams & Wilkins Company. 1938. Price \$3.50.

This is a clinical manual with numerous original illustrations by the author. The work presents the medical aspects of human frailty series issued by the National Committee on Maternal Health. This is the only volume in English written by an obstetrician and operator of professional rank, with a dozen years guidance of research in contraception as a background.

THE LITTLE CYNIC

Teacher—Is the world round or square, Mary?
Mary—Neither. It's crooked.

Marriages

PATRICK JOSEPH FAHEY, Des Plaines, Ill., to Miss Theresa Noon of Onaway, Mich., September 10, 1938.

LAWRENCE EDWARD FOULKE, Washington, Ill., to Miss Lois Merle White at La Grange, Ill., Oct. 25, 1938.

Personals

Dr. Eugene T. McEnery spoke before the DeKalb County Medical Society at Sycamore on Jan. 19, on "Respiratory Diseases in Children."

Dr. Geza deTakats gave a paper on Treatment

of Varicose Veins before the Will-Grundy County Medical Society at Joliet on January 25.

Drs. H. A. Lindberg, Wayne Fox and M. Herbert Barker presented a symposium on Pneumonia before the Peoria Medical Society at Peoria on January 24.

Former Chicagoan Brigadier-General P. J. H. Farrell has been appointed Adjutant-General of California State Militia.

Dr. Daniel B. Kirby, New York, addressed the annual meeting of the Chicago Ophthalmological Society January 16 on "The Surgery of the Exophthalmos."

Dr. O. C. Durham discussed "Inhalant Allergens in the Upper Air" before the Chicago Society of Allergy January 16 and Dr. Franz Alexander, "Psychogenic Factors in Clinical Allergy."

A symposium on disturbances of adolescence was presented before a joint meeting of the Chicago Medical and Pediatric societies January 11; the speakers were Drs. Edward D. Allen, Paul L. Schroeder, Chicago, and Elmer L. Sevringhaus, Madison, Wis.

At a joint meeting of the Chicago Medical Society with the Chicago Roentgen Society January 18 Dr. Byrl R. Kirklin, Rochester, Minn., spoke on "Value of Roentgen Diagnosis as It Pertains to the Physician in General Practice," and Bernard P. Widmann, Philadelphia, "X-Ray, Radium and Cancer."

M. Reese Guttman has recently returned from a World tour in which he visited some of the leading plastic surgical centers of the various countries including England, France, India, China and Japan. In addition he worked with Professor Burian at the Plastic Institute in Prague for six weeks.

Dr. Julius B. Novak has been invited to address the medical staff of the Edward Hines Hospital on Friday, February 3 on the subject of "Tuberculosis." His talk will be accompanied by a sound film: "Diagnostic Procedures in Tuberculosis."

Abraham Levinson will give a talk on Meningitis before the Will-Grundy County Medical Society at Joliet, February 3.

Dr. Charles J. Drueck was invited to address the Madison County Medical Society on February 3, subject, "Pruritis Ani."

Dr. Willard Van Hazel gave a paper on "Treatment of Empyema" before the Kankakee County Medical Society, January 12.

Dr. Arthur F. Abt has been asked to address the Will-Grundy County Medical Society of Joliet, Illinois, at their February luncheon meeting at the Louie Joliet Hotel, February 10, 1939. The subject will be: "Injuries of the Newborn," illustrated with movies.

Dr. Henry E. Irish will give a talk on "Diagnosis and Treatment of Pneumonia in Infants" before the Ford County Medical Society on February 2.

Dr. James P. Simonds addressed the Rotary Club of Rockford on January 12.

Dr. Walter Schiller, director of laboratories, Cook County Hospital, will deliver the Charles Sumner Bacon Lectures for 1938-1939 in the Medical and Dental College Laboratories Building, University of Illinois College of Medicine, February 15-16. His subjects will be "Endometrioma and Endometriosis," and "Congenital and Acquired Sex Changes."

Dr. Ralph A. Reis participated in a Clinical Conference on Ostetrics January 13, Jersey-Greene County Medical Societies. His subject was "Forceps Delivery."

Dr. Andrew C. Ivy was invited to give a talk on "Diagnosis and Treatment of Diseases of the Biliary Tract," before the Bureau County Medical Society, January 10.

Dr. Edward A. Oliver addressed the Will-Grundy County Medical Society, January 11, subject, "Some Common Diseases of the Skin."

Dr. Arrie Bamberger gave a paper on "Head Injuries," before the Williamson County Medical Society at Herrin, January 10.

Dr. Herman L. Kretschmer addressed the Atlanta Post Graduate Medical Assembly at Atlanta on January 17, subjects "Technique, and End Results in Transurethral Prostatic Resection" and "Urological Problems in Children."

Dr. John A. Bigler was invited to give a paper on the Use of Sulfanilamide in Pediatric Practice before the Ogle County Medical Society, January 19.

Dr. R. B. Malcolm gave a paper on "Hernia" before the Will-Grundy County Medical Society, January 18.

Dr. Philip Schneider was invited to address the doctors of McHenry County Medical Society at Woodstock, January 19 on "Toxemias of Pregnancy."

Dr. Ford Hick was invited to give a program on "Pneumonia" before the Scott County Medical Society at Davenport, Iowa, January 3.

Dr. Florian E. Schmidt gave a program on Pneumonia before the Jefferson-Hamilton County Medical Society at Mt. Vernon on January 24.

Dr. James H. Hutton held a clinic at the St. Francis Hospital, Litchfield, on January 27 and presented a scientific paper on the "Endocrines" at an evening meeting of the Montgomery County Medical Society.

News Notes

—The Ogle County Medical Society held a meeting January 19, 1939, at the Spoor Hotel, Oregon, at 7:00 p. m. Dr. John A. Bigler, Medical Director of the Out-Patient Department of the Children's Memorial Hospital, gave a very instructive and interesting paper, "The Use of Sulfanilamide in a Pediatric Practice."

—A tricounty medical society, embracing Pope, Johnson and Massac counties, has been organized with Dr. Lewis S. Barger, Golconda, as president. Dr. Virgil O. Decker, Metropolis, was chosen vice president and Dr. Joseph A. Fisher, Metropolis, secretary.

—The week of February 6 has been designated "health week" in Moline. A public meeting will be held February 9 with Dr. August Henry Arp, mayor, presiding. Dr. Albert C. Baxter, Springfield, acting state health director, will speak on "The Meaning of a Public Health Department to a Community." The observance was instigated by the Y. M. C. A. in cooperation with local medical societies, clubs and schools.

—The fifteenth Lewis Linn McArthur Lecture of the Frank Billings Foundation of the Institute of Medicine of Chicago was given by Dr. Owen H. Wangensteen, professor of surgery, University of Minnesota Medical School, Minneapolis, at the Palmer House January 27. The subject of the illustrated lecture was "The Genesis of Appendicitis in the Light of the Functional Behavior of the Vermiform Appendix."

—Dr. Sidney A. Smith, Chillicothe, was elected president of the North Central Illinois Medical Association at its sixty-fifth annual meeting in LaSalle December 6. He succeeded Dr. Wendall A. Potter, Sandwich. Vice presidents are Drs. Howard P. Sloan, Bloomington, and John F. Lewis, LaSalle; Dr. George A. Dicus, Streator, was reelected secretary-treasurer, an office he has held since 1899. A memorial resolution honoring Dr. Ezra T. Goble, Earlville, who died Feb. 23, 1938, was adopted during the meeting. Dr. Goble was a life member of the association who was admitted to membership in 1879. A life membership certificate was presented to Dr. Frank William Nickel, Eureka. Speakers at the meeting included Dr. Jacob Arnold Bargen, Rochester, Minn., who discussed "Diagnostic Aids in the Management of Cancer of the Colon."

—Under a plan adopted January 10 by the council of the Chicago Medical Society with the approval of Dr. Robert A. Black, acting president of the board of health, private physicians will replace physicians of the board of health in the city's syphilis testing program, it is reported. In the future, persons will be asked through educational pamphlets and lectures to go to private physicians for physical examinations, including a syphilis test, the examinations for indigents to be free. Heretofore, health department physicians went into high schools, factories and neighborhood stations to make mass tests of all volunteers. In 1938 over 140,000 tests were made.

—Competitive civil service examinations will be held soon by the state department of health to fill the position of health officer of the Campaign-Urbana Public Health District at a beginning salary of \$4,500. Applications on special forms available on request must be on file in the offices of the department at Springfield not later than noon, February 4. Applicants will be notified by letter as to the definite date of the examinations, which will be held in Chicago. To be eligible for examination, applicants must have graduated from a medical college of recognized standing, be eligible for a license to practice medicine and surgery in all its branches in Illinois and meet the qualifications set up for health officers by the Conference of State and Territorial Health Officers. Details and appli-

cation forms may be obtained from Dr. Albert C. Baxter, acting state health director, Springfield.

—A boulder and plaque were unveiled on the grounds of the Schmitt Memorial Hospital, Beardstown, recently, in honor of the late Dr. Frederick Ehrhardt. The inscription on the plaque reads "This site was donated to Beardstown for a hospital in memory of Dr. Frederick Ehrhardt by his heirs." Dr. Ehrhardt graduated in medicine at the University of Göttingen, coming to America in 1846. He practiced in Baltimore a year before coming to Beardstown. He died in 1881. Dr. Ehrhardt was the original owner of the site given to the city for the hospital, which was dedicated in 1931.

—The Chicago *Tribune* has appointed Dr. Frederick W. Fitz, a member of the staff of Passavant Hospital, as medical counselor for its employees. Dr. Fitz graduated at Northwestern University Medical School in 1934. The counselor's services will be controlled by the Dearborn Mutual Benefit Association, an employees' organization, the cost to be met by the *Tribune* company. The counselor's services will be entirely advisory. He will not treat or prescribe for or become the personal physician of any employee or member of any employee's family. According to the *Tribune*, the counselor's duties will be:

1. To confer with employees who wish to consult him about their personal medical problems or those of their families.
2. To advise, when requested, as to competent physicians in all parts of the city and suburbs and to maintain a list of such physicians, men known to possess not only skill but a high sense of honor and integrity, whose fees will be in accordance with the employee's capacity to pay.
3. To assist in arranging for surgical procedures, hospital accommodations, and so on.
4. To act, when the employee or his family desires, as an agent between them and the physician they select. The counselor's medical knowledge would assure a fair answer to such questions as the necessity for a proposed operation.
5. To cooperate in assuring employees fair charges on the part of physicians, surgeons, hospitals and nurses.

6. When an employee so requests, to check any diagnosis brought him by the employee, either by conference with the physician making it or by reference to the symptoms leading to the diagnosis.

7. To advise on group health problems of employees, and inspect working conditions in departments of the *Tribune*.

Deaths

PAUL BARNABUS BAUER, White Hall, Ill.; University of Illinois College of Medicine, Chicago, 1934; A Fellow A. M. A.; aged 36; died, Nov. 15, 1938, of brain tumor.

JOHN C. BRYAN, Chicago; Rush Medical College, Chicago, 1877; aged 88; died, Nov. 4, 1938, of chronic myocarditis and arteriosclerosis.

ALONZO ALLEN FUSON, Summum, Ill.; St. Louis University School of Medicine, 1912; on the staff of the Graham Hospital, Canton; aged 55; died suddenly, Nov. 18, 1938, of heart disease.

ULYSSES J. GRIM, Waukegan, Ill.; Rush Medical College, Chicago, 1891; professor emeritus of otorhinolaryngology, Loyola University School of Medicine, Chicago; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; on the staffs of the Illinois Eye and Ear Infirmary and the Mercy Hospital, Chicago; aged 72; died, Oct. 8, 1938, in St. Therese's Hospital, of heart disease.

MINERVA HERRICK, Chicago; Illinois Medical College, Chicago, 1906; aged 77, died, Nov. 13, 1938, of acute dilatation of the heart, myocarditis and arteriosclerosis.

WILLIAM F. HOTCHKIN, Blue Island, Ill.; Chicago Homeopathic Medical College, 1896; aged 76; died in October 1938 of chronic nephritis.

WILLIAM WILSON HOUSTON, Good Hope, Ill.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1901; aged 61, died, Nov. 8, 1938, in Marietta Phelps Hospital, Macomb, of chronic nephritis.

EDNA ZINN JUCHHOFF, Chicago; Chicago Medical School, 1927; a Fellow A. M. A.; aged 57; died, Oct. 7, 1938, of myocarditis.

SHIRLEY WILLIAM LANE, Kankakee, Ill.; Chicago College of Medicine and Surgery, 1908; member of the Illinois State Medical Society; on the staff of St. Mary's Hospital; aged 53; died, Nov. 21, 1938, of myocarditis.

JOHN TUGAW LEGIER, Carmi, Ill.; Bellevue Hospital Medical College, New York, 1891; a Fellow, A. M. A.; past president of the White County Medical Society; on the staff of the Carmi Hospital; aged 71; died, Nov. 7, 1938, of nephritis.

HUGH TALBOT PATRICK, eminent neurologist, died in Chicago, January 5, of carcinoma of the stomach. Dr. Patrick was born in New Philadelphia, Ohio, May 11, 1860. After his preliminary education in the Univer-

sity of Worcester (1878-1880), he received the degree of doctor of medicine from Bellevue Hospital Medical College of New York University in 1884. He studied nervous and mental disease abroad from 1891 to 1894 and then returned to Chicago to take up the practice of neurology. In 1896 he married Fanny E. Gary, daughter of Judge Joseph E. Gary. In 1896 also he became professor of nervous and mental disease in the Chicago Polyclinic. He became assistant professor of nervous disease in Northwestern University in 1894, later clinical professor, and subsequently emeritus professor of nervous disease. He had been from time to time attending or consulting neurologist to the Wesley, Passavant, Polyclinic, Henrotin Memorial and St. Anthony's Hospital, as well as to the Illinois Charitable Eye and Ear Infirmary and the Illinois Eastern Hospital for the Insane. His eminence as a practitioner in his special field was recognized by election to the presidency of the American Neurological Association and the Chicago Neurological Society. He was also corresponding member of the Société neurologique de Paris. During the World War he served as consultant neurologist and saw service in several of the larger camps in the United States.

To the American Medical Association Dr. Patrick contributed of his efforts as a delegate from Illinois in 1912 to the House of Delegates, and again in 1919-1920 as a delegate from the Section on Nervous and Mental Diseases. He served in the same year as chairman of the Reference Committee on Sections and Section Work. He also served as secretary of the Section on Neurology and Medical Jurisprudence from 1897 to 1899, and as chairman of the section 1899-1900.

Dr. Patrick gave especially of his services in the foundation of the *Archives of Neurology and Psychiatry*, making it without doubt the leading publication in its field in the world. He was active in organizing support for such a periodical and became its first editor. In November 1936 a special issue of the *Archives of Neurology and Psychiatry* was dedicated to him. It contained, in addition to notes of appreciation by Drs. Peter Bassoe, Bernard Sachs and Prof. Georges Guillemin of Paris, contributions on neurologic topics by these writers and by many others who were from time to time associated with Dr. Patrick in his work. As editor of the *Archives of Neurology and Psychiatry* he was instrumental in making it reflect constantly the progress of American medicine in the fields of neurology and psychiatry.

His own contributions to the advancement of his specialty included articles on arteriosclerosis of the nervous system, chronic progressive hemiplegia, the motor neuron in practical diagnosis, the proper care and treatment of the patient with epilepsy, syphilis of the nervous system, and the factor of fear in nervous diseases. As he grew older he developed special interest in biographies and the historical aspects of neurology.

The death of Dr. Hugh T. Patrick is mourned by innumerable physicians and laymen who admired his facile mind, his wit and his faithful friendship.

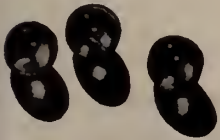
DAVID HENRY WILLIAMS, JR., Chicago; Rush Medical College, Chicago, 1897; aged 69; died, Oct. 2, 1938.

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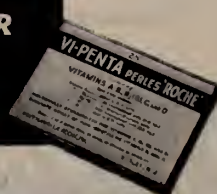
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BUYERS INDEX

ABDOMINAL SUPPORTERS

S. H. Camp & Co., Jackson, Mich..... 10

FOODS

Coca-Cola Co., Atlanta, Ga..... 25
 Corn Products Refining Co., New York City..... 6
 R. B. Davis Co., Hoboken, N. J..... ..
 Knox Gelatine Laboratories, Johnstown, N. Y..... ..
 Mead, Johnson & Co., Evansville, Ind..... 17
 S. M. A. Corporation, Cleveland..... 7

FINANCIAL AND INSURANCE

Employers Mutuals, Wausau, Wis..... 20
 Medical Protective Co., Fort Wayne, Ind..... 26
 Physicians Casualty Co., Omaha, Neb..... 27

HOSPITALS

Stokes Hospital, Louisville, Ky..... 23
 Summit Hospital, Oconomowoc, Wis..... 24

INSTITUTE

Chicago Tumor Institute, 21 West Elm St..... 27

PHARMACEUTICALS

Alha Pharmaceutical Co., 80 Varick St., New York City... ..
 American Agency, French Vichy, Brooklyn, N. Y..... ..
 American Can Co., 230 Park Ave., New York City..... 3
 Armour & Co., Chicago..... ..
 Ernst Bischoff, Ivoryton, Conn..... ..
 Bovinine Company, Chicago..... 15
 Bristol-Myers Co., New York..... ..
 Carnrick, G. W., Co., 20 Mt. Pleasant Ave., Newark, N. J. 24
 Chemico Laboratories, Indianapolis, Ind..... 27
 Ciba Company, Cedar and Washington St., New York City ..
 Crookes Laboratories, New York City..... 23
 Denver Chemical Co..... 29
 E. Fougere & Co..... ..
 Galatest 23
 Gold Pharmacal Co., New York City..... 26
 Harrower Laboratory 28
 Hoffman-LaRoche, Inc., Nutley, N. J..... 18

Hynson, Westcott & Dunning, Charles and Chase Sts.,
 Baltimore 13
 Lederle Laboratories, 30 Rockefeller Plaza, New York....30, 31
 Lilly, Eli, & Co., Indianapolis, Ind..... 16
 Morris, Philip, & Co., 19 Fifth Ave., New York..... ..
 Nutrition Research Laboratories, 332 S. Michigan Ave.,
 Chicago
 Parke, Davis & Co., Detroit, Mich..... 5
 Petrolagar Laboratories, 8134 McCormick Blvd., Chicago... 4
 Reed & Carnrick, Jersey City, N. J..... ..
 Roche Organon, Inc., Nutley, N. J..... 2
 Schering & Glatz, Inc., New York City..... 14
 G. D. Searle & Co., 4737 Ravenswood Ave., Chicago..... ..
 Sharp & Dohme, 111 N. Canal St., Chicago..... 12
 E. R. Squibb & Sons, New York..... 9
 Frederick Stearns & Sons, New York..... 8
 Wm. R. Warner & Co., 113 W. 118th St., New York City ..
 Winthrop Chemical Co., 170 Varick St., New York City.... 11
 Zemmer Co., Pittsburgh, Pa..... 21

SANATORIA AND SANITARIA

Edward Sanatorium, Naperville, Ill..... 25
 Kenilworth Sanitarium, Kenilworth, Ill..... 21
 Michell Farm Sanatorium, Peoria, Ill..... 32
 Milwaukee Sanitarium, Wauwatosa, Wis.....Front Cover
 Norbury Sanitarium, Jacksonville, Ill..... 21
 North Shore Health Resort, Winnetka..... 25
 Rogers Memorial Sanitarium, Oconomowoc, Wis..... 32
 Waukesha Springs Sanitarium, Waukesha, Wis..... 21
 Weirick's Sanitarium, Elgin, Ill..... 23

RADIUM

Physicians Radium Assn., 55 E. Washington St., Chicago... 26

SCHOOLS

Arizona Schoolatorium, Tucson..... 24

SURGICAL SUPPLIES

Baum Co., New York..... ..
 General Electric X-Ray Corp., 2012 W. Jackson Blvd.,
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Morgan	F. Garm Norbury, Jacksonville	Friedrich Engelback, Jacksonville.

(Continued on page 23)

(Continued from page 22)

Moutrie	S. H. Ambrose, Lovington.....	W. B. Kilton, Sullivan.
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CONTENTS—Continued

Nasal Septum Surgery. M. H. Cottle, M. D., Chicago...	161
Huntington's Chorea. Eugene I. Falstein, M. D., and Theo T. Stone, M. D., Chicago.....	164
Shock Treatment of Functional Psychoses. Abraham A. Low, M. D., Chicago.....	169
Laboratory Control of Scarlet Fever. M. H. Seifert, M. D., Wilmette, Ill.	174
Chronic Otitis Media. George E. Shambaugh, Jr., M. D., Chicago	180

EDITORIALS

No Finer Relationship.....	93
Trying It Out on Farmers.....	93
Medicine a Well-Defined Profession.....	96
Educate the Laity.....	97
What Helps Business.....	97
The 1939 Annual Meeting.....	98
Medical Economics. E. S. Hamilton.....	99
Doctor Looks at Specialized Medicine. Ernest L. Shore.....	108
Winnebago Committees	103
Commentators Spread False News.....	104

CORRESPONDENCE

Army Approved. Harold M. Camp.....	104
Women's Field Army. Bowman C. Crowell.....	104
Government in Practice. A. M. Harvey.....	105
Pneumonia Control. A. C. Baxter.....	105
Hygienic Marriage Laws. Effie L. Lobdell.....	107
U. S. A. vs. A. M. A. J. R. Ballinger.....	107
Educational Committee	108
Our New Name.....	109
Witherspoon New Editor.....	110
American Board of Obstetrics.....	110
Medico-Dental Training	110
U. S. Naval Medical Corps.....	110
Negro Physicians to Cooperate.....	111

SOCIETY PROCEEDINGS

Marriages	185
Personals	185
News Notes	186
Deaths	188

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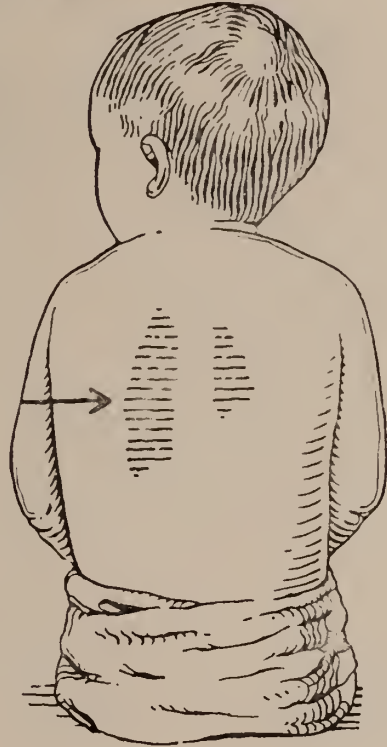


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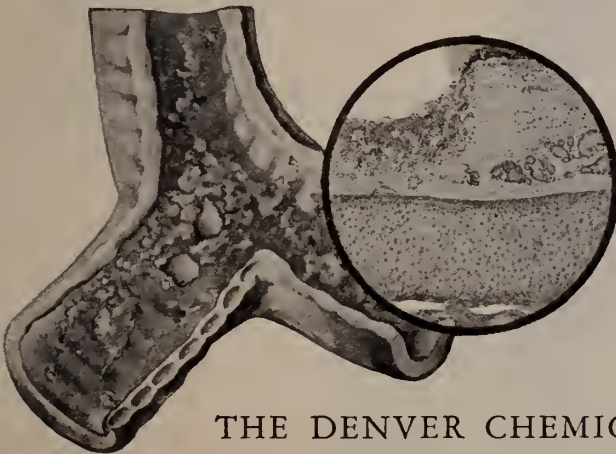
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¹ Levitas, Irving M.: Treatment, Modification and Prevention of Measles by Use of Immune Globulin (Human), J.A.M.A., 1935, 105, 493.

² Laning, G. M. and Horan, T. N.: Immune Globulin Used as a Preventive and Modifier of Measles, Jour. Mich. Med. Soc., 1935, 34, 772.

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CONTENTS:

Editorials (For Titles See Extended Table of Contents) 189

ORIGINAL ARTICLES

Knowledge of Nerve Physiology. *Emmet F. Pearson, M. D., Springfield, Ill.*..... 227
Progressive Myopia. *W. Moore Thompson, M. D., and Oscar B. Nugent, M. D., Chicago.*..... 231
County Society re Legislative Committee. *John R. Neal, M. D., Springfield, Ill.*..... 234
Erythrocyte Sedimentation Rate. *J. B. Stokes, M. D., Pontiac, Ill.*..... 236
Abdominal Surgical Conditions. *Guy S. Van Alstyn, M. D., Chicago.*..... 243
Undulant Fever. *W. R. Roberts, M. D., and E. L.*

Roberts, M. D., Cissna Park, Ill...... 247
Hypertensive Heart. *O. P. J. Falk, M. D., St. Louis, Mo.*..... 252
Patient and Weather. *V. LeBlanc, M. D., Chicago* 254
Rocky Mountain Spotted Fever in Illinois. *B. Q. Dysart, M. D., Henry, Ill.*..... 258
Evanston Social Hygiene Clinic. *Winston H. Tucker, M. D., Robert A. Allen, M. D., Joseph C. Croft, M. D. and Noel G. Shaw, M. D., Evanston, Ill.*..... 260
Surgical Treatment of Gall-Bladder Disease. *Ralph B. Bettman, M. D. and Wm. H. Tannenbaum, M. D., Chicago.*..... 266
Benzedrine Sulfate in Depression. *Isidore Finkelman, M. D. and Daniel Haffron, M. D., Elgin, Ill.* 264

(Continued on page 26)

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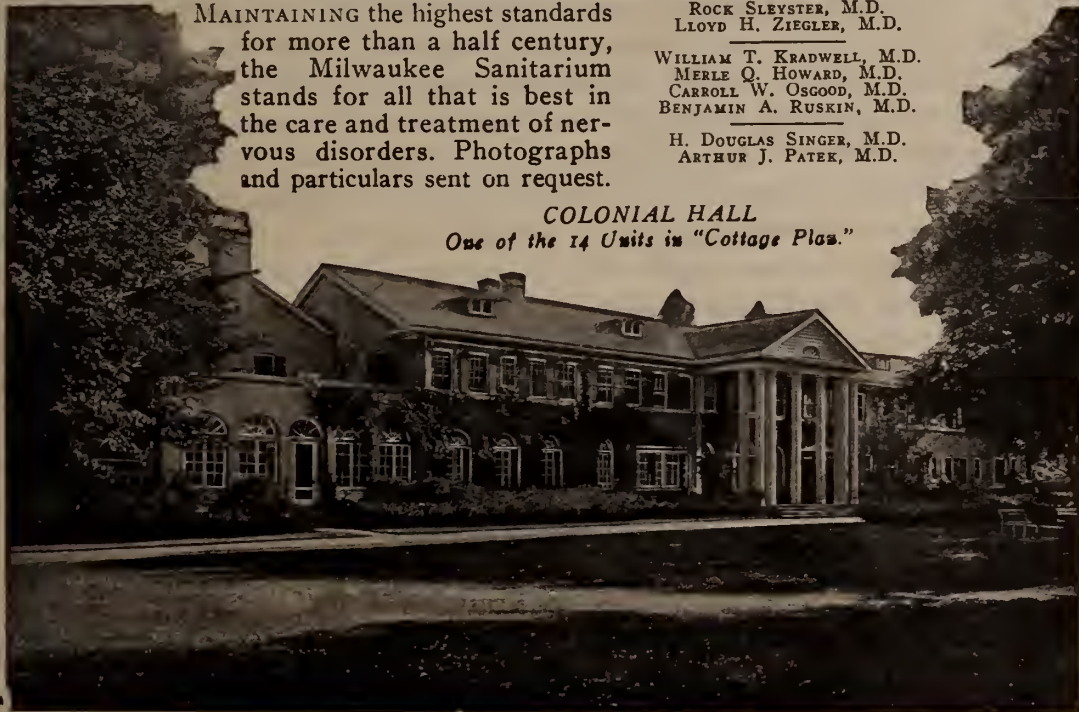
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This list of essential factors is probably incomplete. It has been aptly stated (1) that our species has evolved in the direction of lengthening rather than shortening the list of known dietary essentials. However, it is reasonable to believe that the above list, although incomplete, probably does include all factors whose absence from the ration may cause the most severe types of human dietary deficiency disease.

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the importance of riboflavin (1) in human nutrition postulated.

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(1) 1938. J. Amer. Med. Assn. 110, 1278.

(2) 1938. Ibid. 110, 1441.

(3) 1936. Proc. Soc. Exper. Biol. Med. 35, 217.

(4) 1928. Science. 67, 249.

(5)a. 1935. Nature. 135, 652.

b. 1935. Biochem. J. 29, 1273.

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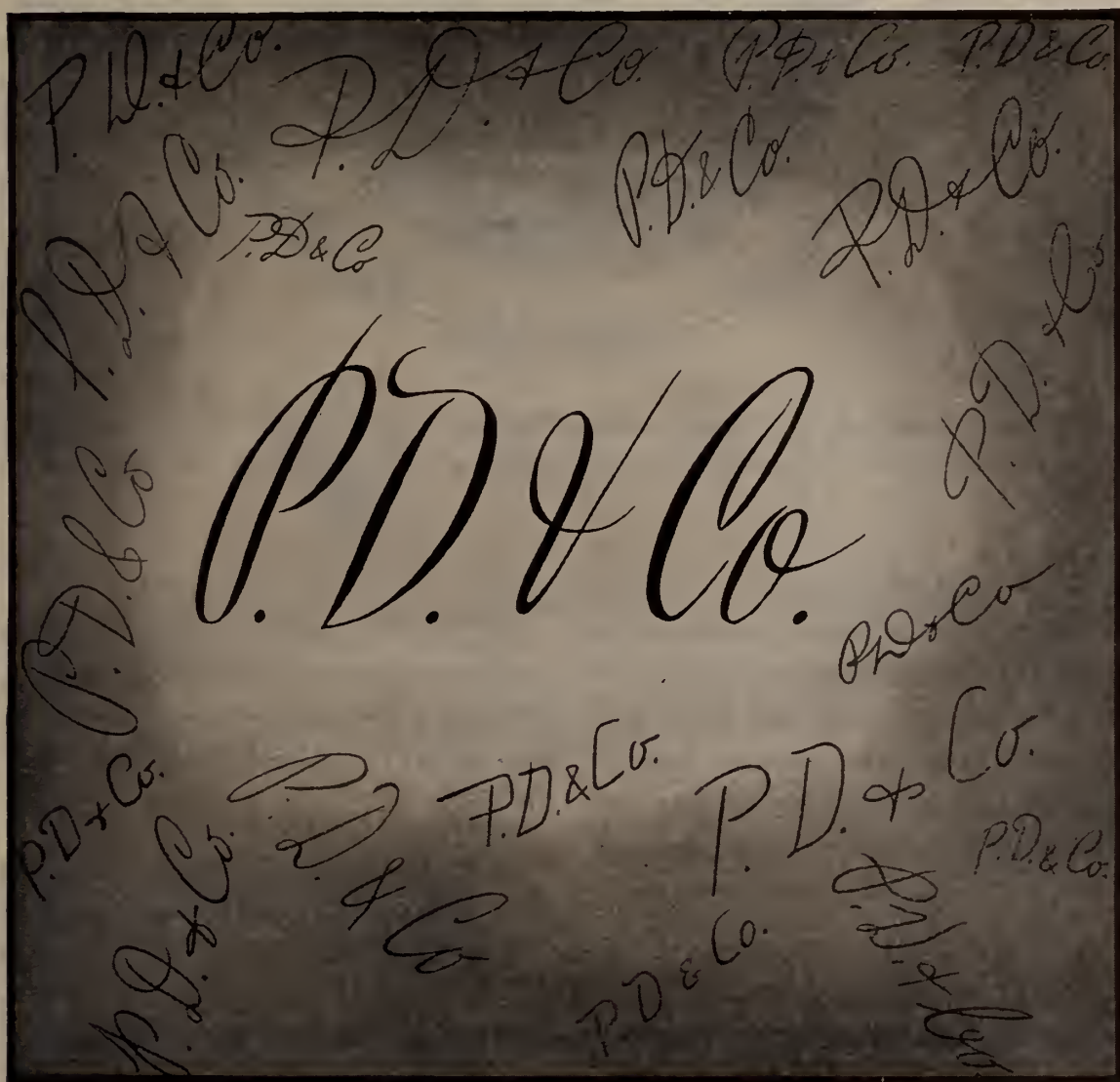
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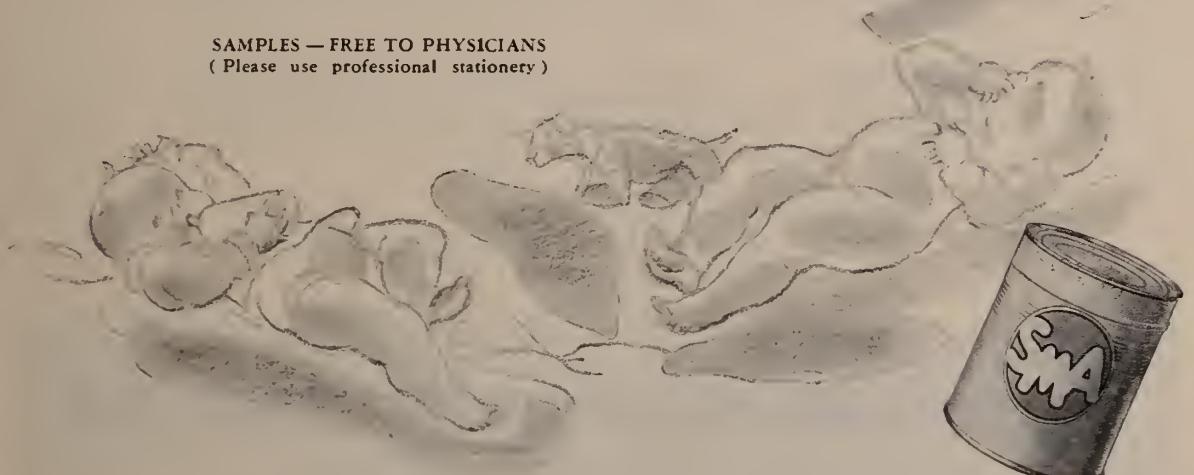
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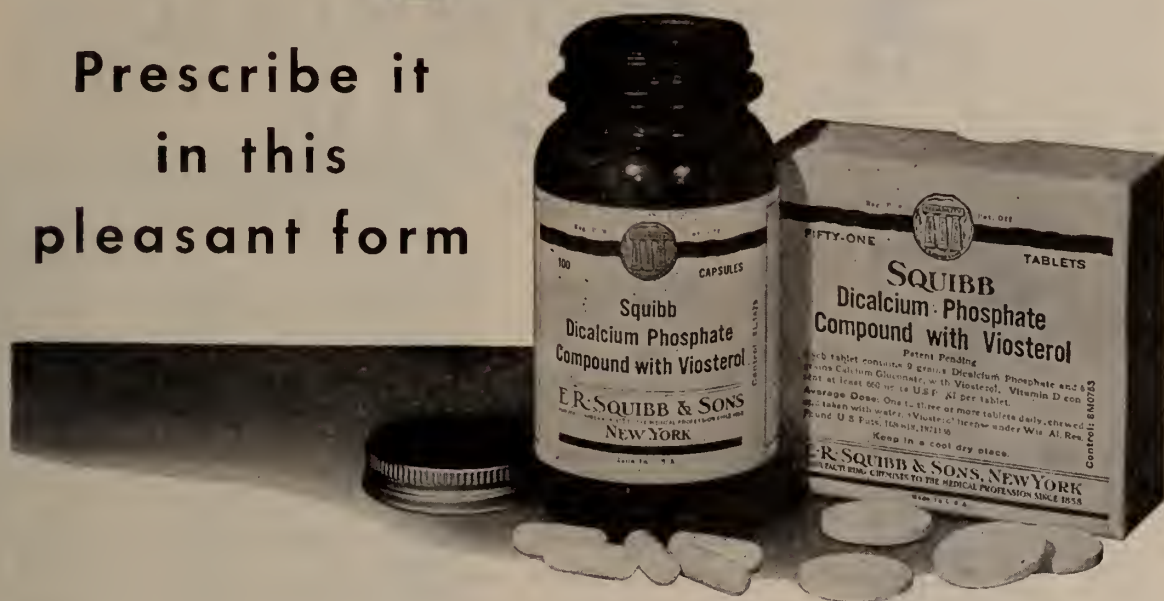
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*Further Clinical Observations on Feeding Infants Whole Milk, Gelatinized Milk, and Acidified Milk. C. Loring Joslin, M.D., F.A.A.P.; Bulletin of the School of Medicine, University of Maryland; Jan. 1939.

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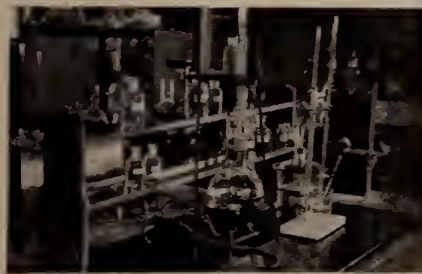
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Editorials

MAINTAIN THE SPLENDID RELATIONSHIPS THAT HAVE EXISTED IN THE PAST BETWEEN THE DOCTOR AND PATIENT

The following taken from *American Agriculturist* is timely and to the point.

The doctors themselves, through their organizations, have suggested an answer to the medical problem:

First: Let the State continue and even extend its public health work to educate and guard people in the field of preventive medicine.

Second: Arrange for that part of the population which is clearly unable to pay doctors' and dentists' fees to be taken care of by local authorities or possibly by representment, never by distant Federal authorities. Under this plan the doctor would not have to do too much charity work nor overcharge his paying patients.

Third: Leave the rest of us alone to run our own lives, choose our own physician and pay him a reasonable fee. Then we can continue to stand on our own feet, keep our self-respect, and maintain the splendid and helpful relationships that have existed in the past between the doctor and his patient.

IS CORONARY THROMBOSIS INCREASING?

Among the important themes for discussion at the present time is the definite clinical entity known as coronary thrombosis or coronary occlusion. During the last twenty-five years it has been slowly but indisputably differentiated from other types of heart lesions. Herrick is given credit for first calling attention to the frequency of cardiac infarction in coronary thrombosis about 1912, and he observed that recovery often followed a first attack. Although this distressing affection simulated angina pectoris to a marked degree, he was finally convinced that they are not identical. Since Herrick's discovery many physicians have devoted much time in investigation

and research in the subject of coronary disease, with the result that a great volume of somewhat conflicting data have been accumulated on the subject. At the present time it is clear that investigators are more interested in problems pertaining to coronary thrombosis than those of any other cardiac disease.

Medical literature is replete with material tending to show that its incidence is increasing rapidly, and to critical eyes it might appear to be the cause of more deaths among doctors during the last several years than it was ten or fifteen years ago. It has even been termed the "doctors' disease." However, some think that we are merely learning how to recognize it and place it in a separate column when it is tabulated with other types of cardiac disease. Many express the opinion that its increase in morbidity and mortality has been relatively small and that better control of infectious diseases has resulted in a check on the morbidity of all types of heart disease. We are reminded that statistics are frequently unreliable and open to criticism. Despite increasing evidence claiming that thrombosis of the coronaries is becoming more frequent, many are not ready to accept this view. The latter point to greater precision in diagnosis, and to the electrocardiograph which is now more widely employed in cardiologic examinations. There is even a hesitancy on the part of numerous investigators to accept the dictum that angina pectoris and coronary thrombosis are diseases of the well-to-do and of business and professional men. It is found that there are great numbers among the working class who are victims of these diseases. Again, a careful review of the literature reveals that comparatively few persons knew anything about coronary thrombosis a generation ago. At the present time there is pretty general agreement that four or five times as many men as women are affected by it, and that instead of being of infrequent occurrence under fifty it now occasions no great surprise when we read that men even under forty are its victims. Many theories are advanced to explain these things, but few bear earmarks of finality and conclusiveness.

Some of the older literature pertaining to coronary thrombosis is not convincing and is open to question; evidently many errors were made in diagnosis and classification of heart diseases. Many cases of coronary thrombosis were diagnosed as attacks of angina pectoris or as "acute

indigestion." In the early days patients with coronary thrombosis were regarded as hopelessly afflicted. It was thought that anastomoses between the right and left branch of the coronary artery were insignificant or entirely wanting. It was regarded as a terminal or end artery. As a result, it was believed that if the artery were obstructed, as in the descending branch of the left coronary, all that portion of heart muscle nourished by it became inefficient. Early investigators were unable to draw any definite conclusions regarding collateral circulation, but subsequently anatomists clearly demonstrated that definite anastomoses do exist between the arteries, and that in some hearts they are much more perfectly formed than in others. Moreover, pathologists pointed to histories of patients with obstruction of the coronary artery or some of its larger branches whose hearts had recovered functionally and they lived in comparative comfort for months and even for many years after the initial attack, especially when it began in a patient under fifty years of age. Another theory is that when gradual occlusion occurs, anastomoses between the capillaries have greater possibility of development. It is now definitely established that the coronary arteries and those of surrounding structures anastomose.

One theory pertaining to the formation of a thrombus is that it first begins by a deposition of blood platelets on the walls of an artery. Other platelets and leukocytes adhere to this growing mass, after which fibrin forms in which red blood corpuscles are caught. Numerous reasons have been given for the formation of a thrombus, among which are injury to the vessel wall and mechanical obstruction with retardation of the flow. Various toxic agents, together with bacteria and the poisons they produce, are responsible for much damage to arterial walls. Frequently these disturbing factors upset cardiac action through the vagus. In some instances the disease is rapidly fatal, while in others occlusion develops gradually by virtue of arteriosclerotic narrowing of the artery. Many scientists believe that the vessels of Thebesius are accessory channels to the coronaries, and that some of the venous blood passes from the capillary beds through them into the heart cavities. Pathologists have often found instances where coronary arteries have been narrowed by disease to such an extent that little, if any, blood could

have passed through them to the tissue they supply in the myocardium. Despite this, infarction has not occurred.

Patients with coronary thrombosis may die suddenly or within a few weeks, while in some instances they live five, ten and even fifteen years after the first attack. Again, necropsy has revealed sclerosis and thrombosis of the coronaries in persons who gave no evidence of cardiac symptoms during life. This latter phase was found very confusing at first, but our present knowledge of this coronary thrombus is much more encouraging, despite the fact that a number die even when they appear to be on the road to recovery. Even when the attacks are accompanied by continued and excruciating pain, the patient may survive and carry on successfully for many years. No doubt, a first attack, with the fear of impending death, frequently enables many victims to realize that they have at last been chastened by neglecting to employ common sense in preserving body and mind. Generally this abrupt realization serves a useful purpose, for afterward many patients willingly eschew pernicious habits and practices that do not and never can conform with clear reasoning. It is clearly obvious to all that the heart is an organ with extraordinary power and in most instances it has sufficient reserve to resist even extraordinary strains and injuries to a remarkable degree.

Mortality statistics indicate that the number of deaths from heart disease is increasing. Heart disease is now accepted as the principal cause of death in the United States, Great Britain and Germany. About 2,000,000 people are said to have heart disease in the United States, the mortality rate being nearly twice as large as that of cancer. Our strenuous manner of living is given as one of the underlying causes, while another arises from the increased length of life, thus permitting a greater number of people to reach the "heart disease" age than they did a generation ago. Sustained efforts of physicians to curb or destroy tuberculosis, scarlet fever and diphtheria during the last fifty years have saved thousands of persons for a longer life. Numerous cases of heart disease are the result of injury to some part of the circulatory system by a previous infection, such as rheumatism and syphilis. Cardiac manifestations of scarlet fever and syphilis usually do not appear until fifteen to twenty years after infection, and much depends

upon the nature and severity of the infection and the reaction of the heart to it. Heart disease is recognized as an affliction, the result of many and varied causes such as fatigue, hardship, worry and excitement. Toxic substances, unsuitable food, excessive smoking, and interminable drinking are other etiological factors that play an important role. There appears to be a growing belief that certain drugs and other substances introduced intravenously may, in some instances, favor the development of thrombi. Advocates of this opinion feel that such substances are frequently introduced into the blood stream indiscriminately.

Obituaries of 35,799 physicians published in the Journal of the American Medical Association between January 7, 1928, and December 31, 1938, present many interesting facts. We find in this review that 10,715 died of heart disease, and of this number 2,239 succumbed to coronary thrombosis. In many instances no cause of death was given; they were "found dead," "died suddenly of senility," or died as a result of general debility." For example, in the week ending April 27, 1935, we find obituary notices of 102 physicians with no cause of death given in 34. In the issue of May 18, 1935, the total deaths are 124 with no cause given in 58. A total of 100 obituaries is found in the Journal of April 10, 1937, but no cause was reported in 47 of them. 2,910 physicians died in 1928; 750 had heart disease, and of this number only 37 cases of coronary thrombosis were reported. 2,858 deaths of physicians appeared in the Journal during 1929, and only 46 had coronary thrombosis, while the total cases of heart diseases were 764. At the end of this eleven-year period we find that 3,417 doctors died in 1937 and 3,811 died in 1938. In 1937 nine hundred and seventy-one died of heart disease, including 368 who had coronary thrombosis. In 1938 there were 1,153 deaths from heart disease; of this number 466 were reported as coronary thrombosis.

Perhaps the factor of greatest importance to patients suffering from coronary thrombosis is imperturbability. When one can retain both physical and mental poise and steadfastly refuse to be disconcerted by signs and symptoms that, in some instances completely disappear later on, he has thrown up a wall of circumvallation around himself that is of infinite value. When he earnestly and consistently endeavors to readjust his

way of living, even in the face of adverse circumstances and discouragement arising from his affliction, he exhibits a commendable spirit and a splendid philosophy that will go far toward carrying him over pitfalls that beset his paths leading to well-being and recovery. If one wishes to abide with friends a little longer, and so enjoy the delights and beauties of future seasons, it will be well for him to realize that frequently slight repairs judiciously made will enable him to live longer. It is clear that if one wishes to avert further progress of this disease and avoid subsequent attacks he must thoroughly adjust himself to new conditions and possible limitations. Moderation in all things avoiding anger, fatigue, overeating, should be the guiding principle for all who are afflicted with coronary thrombosis.

LOOKS LIKE A PUBLICITY STUNT

The National Health Conference appears to have been principally another publicity stunt in the campaign of the propaganda machine for socialized medicine.

"Numerous and complicated details of the plan offered to the conference should receive careful perusal from every physician. Some of these proposals, for sheer grandeur, might easily outdo the ambitious, mutual gymnastics of a grandiose parietic. Ingeniously worded phrases insure absolute federal control and the words 'federal participation' should be thus rewritten. When the federal government offers to furnish one-half the necessary funds, it is the same old scheme by which the Constitution is circumvented for the purpose of federal domination.

"The result will be bureaucratic interference with the development and control of the widely diverse methods necessary to carry out such an ambitious program covering all parts of the country."

COMPARE GOVERNMENT ATTITUDE TOWARDS LABOR UNIONS AND MEDICAL ORGANIZATIONS

While labor unions and organizations of all manner of guild classification are encouraged, even almost "adopted" by the Washington bureaucracy, the American Medical Association is

indicted for offenses against the Sherman Anti-Trust laws.

Quoting the September issue of the *Journal of Accountancy* we note that even a lay periodical comments:

"Some commentators have pointed out the rather peculiar contrast between the position of the professional society and the labor unions under present legislation. Existing laws seem to encourage labor unions to struggle for the closed shop and fixed standards of compensation, while the medical societies are being attacked on grounds of monopolistic practice merely because of expulsion, from what are after all voluntary membership organizations, of physicians, who practise in a manner which the societies consider detrimental to the profession.

"We have no desire to enter the controversy of whether the medical societies' attitude is morally justified or not. Individual physicians and surgeons of high standing differ violently on the question. The societies may be entirely wrong from the social point of view. We draw attention to the proceedings only because it seems odd to find an entire profession in such a peculiar legal situation. *Perhaps a hidden explanation of this unusual situation can be found in the assistant attorney-general's hint that if the American Medical Association should cooperate with the Department of Justice by halting practices which are known to be regarded unsympathetically by prominent officers of the Government, the controversy might be resolved by a consent decree.* (Italics ours).

"There is probably no analogy to be drawn between the accounting profession and the medical profession in its controversy with Government. The highly personal nature of medical services and the social importance of community health invest the present argument with a public interest which does not extend in the same measure to affairs of other professions.

"All the professions, however, do have much in common. Many of them have recently been criticized by various agencies of the Government. The case against the medical societies focuses attention again on questions of future relations between the two groups."

THE PHYSICIAN'S INCOME TAX, 1939

The Revenue Act of 1938 amended in numerous respects the prior income tax law but none of the changes relate to physicians as a class distinct from the main body of federal income tax payers.

Every one who is required to make a federal income tax return must do so on or before March 15, unless an extension of time for filing his return has been granted. For cause shown, the collector of internal revenue for the district in which the taxpayer files his return may grant such an extension, on application filed with him by the taxpayer. This application must state fully the causes for the delay. Failure to make a return may subject the taxpayer to a penalty of 25 per cent. of the amount of the tax due.

The normal rate of tax on residents of the United States and on all citizens of the United States regardless of their places of residence is 4 per cent. on net income in excess of the exemptions and credits.

WHO MUST FILE RETURNS

1. If gross income was less than \$5,000 during 1938, a return must be filed (a) by every unmarried person, and by every married person not living with her husband or his wife, whose net income was \$1,000 or more, and (b) by every married person living with her husband or his wife, whose net income was \$2,500 or more. If the aggregate net income of husband and wife, living together, was \$2,500 or more, each may make a return or the two may unite in a joint return.

2. Returns must be filed by every person whose gross income in 1938 was \$5,000 or more, regardless of the amount of his net income and of his marital status. If the aggregate gross income of husband and wife, living together, was \$5,000 or more, they must file either a joint return or separate returns, regardless of the amounts of their joint or individual net incomes.

If the status of a taxpayer, so far as it affects the personal exemption or credit for dependents, changed during the year, the personal exemption and credit must be apportioned, under rules and regulations prescribed by the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury, in accordance with the number of months before and after such change. For the purpose of such apportionment a frac-

tional part of a month should be disregarded unless it amounts to more than half a month, in which case it is to be considered as a month.

As a matter of courtesy only, blanks for returns are sent to taxpayers by the collectors of internal revenue, without request. Failure to receive a blank does not excuse any one from making a return; the taxpayer should obtain the necessary blank from the local collector of internal revenue.

The following discussion covers only matters relating specifically to physicians. Full information concerning questions of general interest may be obtained from the official return blank and from the collectors of internal revenue.

GROSS AND NET INCOMES: WHAT THEY ARE

Gross Income.—A physician's gross income is the total amount of money received by him during the year for professional services, regardless of the time when the services were rendered for which the money was paid, plus such money as he has received as profits from investments and speculation and as compensation and profits from other sources.

Net Income.—Certain professional expenses and the expenses of carrying on any enterprise in which the physician may be engaged for gain may be subtracted as "deductions" from the gross income, to determine the net income on which the tax is to be paid. An "exemption" is allowed, the amount depending on the taxpayer's marital status during the tax year as stated before. These matters are fully covered in the instructions on the tax return blanks.

Earned Income.—In computing the normal tax, but not the surtax, there may be subtracted from net income from all sources an amount equal to 10 per cent. of the earned net income, except that the amount so subtracted shall in no case exceed 10 per cent. of the net income from all sources. Earned income means professional fees, salaries and wages received as compensation for personal services, as distinguished from receipts from other sources.

The first \$3,000 of a physician's net income from all sources may be regarded under the law as earned net income, whether it was or was not in fact earned within the meaning set forth in the preceding paragraph. Net income in excess of \$3,000 may not be claimed as earned unless it in fact comes within that category. No physi-

cian may claim as earned net income any income in excess of \$14,000.

DEDUCTIONS FOR PROFESSIONAL EXPENSES

A physician is entitled to deduct all current expenses necessary in carrying on his practice.

A person may elect to report his income on a cash or accrual basis. He may not change the basis, however, without permission of the Commissioner of Internal Revenue. If he reports on a cash basis, he includes his fees or other income when received regardless of when earned; if on an accrual basis, he includes them in the period when the services are rendered and when charges are found to be wholly or partially uncollectible he may deduct them as bad debts in the year when so determined.

The doctor's expenses are deductible if incurred in the production of income and are not deductible when they are classified as "personal" or "living."

The following items are deductible: All interest and taxes (except federal income and surtaxes). The doctor may deduct his office expenses including salaries paid attendants or assistants, rent, telephone service, light, heat, and similar necessary expenses and that portion of his home expenses clearly allocable to the conduct of his practice: medical dues, laboratory expenses, losses by fire and other causes, the cost of supplies, medicines, instruments, medical books and magazines, furniture and other equipment (except the internal revenue department may require that those items with a useful life materially longer than one year, be depreciated during the life instead of written off); the cost of transportation in the pursuit of practice including taxi and bus fares, depreciation on cars, chauffeur's wages, gasoline, oil, repairs, etc.; amounts expended in railroad fares, hotel accommodations and meals in connection with attending meetings and conventions of medical associations; contributions to educational, religious or charitable institutions limited to 15% of the net taxable income; expense incurred by a physician in defense of a suit for malpractice in his profession, insurance premiums paid for insurance against professional losses are also deductible.

Among items of non-taxable income may be noted:

"The personal exemptions of (a) \$1,000 for a single person or for a married person not living with husband or wife or (b) \$2,500 for a married person living with husband or wife during the entire taxable year; (Married persons, if filing separate returns may divide the exemption as they elect) or (c) \$2,500 for the head of a family, whether married or not.

"The credit of \$400 for each person (other than husband or wife) under 18 years of age, or incapable of self-support because mentally or physically defective, who received his or her chief support from the taxpayer during the taxable year."

"The credit for net earned income calculated as follows: 10% of the amount of the earned net income but not in excess of 10% of the amount of the net income. Earned income will be considered to be not less than \$3,000 or more than \$14,000 (for normal tax only).

"Amounts received as beneficiary of a life insurance policy, whether in lump sums, in installments or as annuities (with exceptions).

"Amounts received as gifts and money and property acquired by bequest, devise or inheritance.

"In interest on obligations of the United States, territories or political subdivisions thereof and the obligations of certain federal instrumentalities, the interest on whose obligations is guaranteed by the United States (for normal tax only).

"Compensation paid by a state or political subdivision thereof to its officers or employees for services rendered in connection with the exercise of an essential governmental function.

DEPRECIATION ON STOCK AND EQUIPMENT

Equipment comprises property of a more or less permanent nature. It may ultimately wear out, deteriorate or become obsolete, but it is not in the ordinary sense of the word "consumed in the using."

The cost of equipment, for professional use, cannot be deducted as expense in the year acquired. Examples of this class of property are automobiles, office furniture, medical, surgical and laboratory equipment of more or less permanent nature, and instruments and appliances constituting a part of the physician's professional outfit, to be used over a considerable period of time, generally over one year. Books

of more or less permanent nature are regarded as equipment and the purchase price is therefore not deductible.

Although the cost of such equipment is not deductible in the year acquired, nevertheless it may be recovered through depreciation deductions taken year by year over its useful life, as described below.

No hard and fast rule can be laid down as to what part of the cost of equipment is deductible each year as depreciation. The amount depends to some extent on the nature of the property and on the extent and character of its use. The length of its useful life should be the primary consideration. The most that can be done is to suggest certain average or normal rates of depreciation for each of several classes of articles and to leave to the taxpayers the modification of the suggested rates as the circumstances of his particular case may dictate. As fair, normal or average rates of depreciation, the following have been suggested: automobiles, 25 per cent a year; ordinary medical libraries, x-ray equipment, physical therapy equipment, electrical sterilizers, surgical instruments and diagnostic apparatus, 10 per cent a year; office furniture, 5 per cent a year.

The principle governing the determination of all rates of depreciation is that the total amount claimed by the taxpayer as depreciation during the life of the article, plus the salvage value of the article at the end of its useful life, shall not be greater than its purchase price or, if purchased before March 1913, either its fair market value as of that date or its original cost, whichever may be greater. The physician must in good faith use his best judgment and claim only such allowance for depreciation as the facts justify. The estimate of useful life, on which the rate of depreciation is based, should be carefully considered in his individual case.

In a Treasury Decision, approved Feb. 28, 1934, No. 4122, it is held, among other things, that

"The cost to be recovered shall be charged off over the useful life of the property.

"The reasonableness of any claim for depreciation shall be determined on the conditions known to exist at the end of the period for which the return was made.

"Where the cost or other basis of the property has been recovered through depreciation or other

allowances, no further deduction for depreciation shall be allowed.

"The burden of proof will rest on the taxpayer to sustain the deduction claimed.

"The deduction for depreciation in respect to any depreciable property for any taxable year shall be limited to such ratable amount as may reasonably be considered necessary to recover during the remaining life of the property the unrecovered cost or other basis."

Oculists who furnish spectacles, etc., may charge as income money received from such sales and deduct as an expense the cost of the article sold. Entries on the physician's account books should in such cases show charges for services separate and apart from charges for spectacles, etc.

Social Security Taxes.—The excise taxes imposed on employers by section 804, title VIII, and section 901, title IX, of the Social Security Act, commonly referred to as old age and unemployment benefit taxes, are deductible annually by employers in computing net income for federal income tax purposes. If the taxpayer's return is made on a cash basis, as are the returns of practically all physicians, the taxes are deductible for the year in which they are actually paid. If the return is made on an accrual basis, the taxes are deductible for the year in which they accrue, irrespective of when they are actually paid. Employees, including physicians whose employment brings them within that category, may not deduct the tax imposed on them by section 801, title VIII, of the Social Security Act, generally referred to as the old age benefits tax. If however, the employer assumes payment of the employee's tax and does not withhold the amount of the tax from the employee's wages, the amount of the tax so assumed may be deducted by the employer, not as a tax paid, but as an ordinary business expense.

ALMOST AS GOOD

Little Ikey came up to his father with a very solemn face.

"Is it true, father," he asked, "that marriage is a failure?"

His father surveyed him thoughtfully for a moment. "Well, Ikey," he finally replied, "if you get a rich wife it's almost as good as a failure."—*Lippincott's*.

MEDICAL ECONOMICS

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The Speech of Dr. Luce, President of the Michigan State Medical Society, at the recent meeting of the Northwest Regional Conference was ample payment for attending the meeting if nothing further had been presented. Fortunately, the local newspapers gave a rather comprehensive report of the talk and we hope that all of you read it. Dr. Luce reporting on the conference between the special Committee of Five appointed by the House of Delegates of the American Medical Association at a special meeting held in Chicago last September, to confer with the Interdepartmental Committee, headed by Miss Josephine Roche, told that at neither meeting of the two groups was there any opportunity to present both sides of the controversial subject for frank discussion, but that the entire meeting was perfunctory and that no changes were made in the typewritten report which was on the desk of every man attending the so-called conference, when he sat down at his desk at the beginning of the meeting. Surely, not a very good example of cooperation, but rather of dictatorial methods of approach.

The attendance at the Northwest Regional Conference was very good. The attendance of men from distant parts of the nation was particularly noticeable. That demonstrated that the medical profession of the entire nation are interested in the economic problems and are willing to come half the distance across the United States to learn more, as well as present their ideas on the proper solution of the same. We hope in the near future to have some of the talks available for presentation to the physicians of Illinois either through reprints or on the pages of the ILLINOIS MEDICAL JOURNAL.

The propaganda mill against the medical profession continues to grind. *Liberty*, in its March 4 issue, presented another of its articles, this time by Frederick Lewis, entitled "How the Medical Trust Victimizes the Average Man."

This article teems with inaccuracies and half true statements, all interpreted in criticism of the medical profession. The first part in particular should be critically read for it tells the story of why and how the magazine is against the medical profession. Read the article, think about and be ready to discuss it with your friends and neighbors, who will be ready and anxious to find out how you, their friend and physician, feel about the entire subject. If you can point out some of the untruths and inaccuracies of the article it is much more effective than a general denial.

The February issue of the *Commentator* had the most impressive article on the "New Deal in Medicine," by Logan Clendening, that has as yet come to the attention and notice of the writer. It presents much good material and many facts in such a convincing manner that the reader must be convinced that there are many disadvantages to a radical change in the manner of conducting the practice of medicine. Read this article and recommend it to your friends. Most of the time, the articles in this magazine have been very fair to the medical profession although at times they have presented the other phase of the question, but this is only right and proper.

The voters of several communities of the state have been circularized recently by an article from the pen of Samuel B. Pettingill, former member of Congress from Indiana, on the subject "Shall Medicine Be Socialized?" This is from the Congressional record. It is a most excellent presentation of the dangers lurking in the proposed Wagner Bill. In addition there is an editorial by Frank Gannett, Editor of *America's Future* on "Shall Politicians Control Medicine?" The writer does not know under whose sponsorship this distribution has been made, but is inclined to think that it is by some group outside of organized medicine. Regardless of the

sponsorship, it is a most excellent piece of work and deserves the thanks of every physician in the United States today. What particularly appealed to the writer is the fact that it stresses the necessity of "Write your senator and congressmen today." The last *Bulletin* of Public Relations Bureau of the Medical Society of the State of New York was on the subject, "Has your Congressman heard from You?" Mr. Anderson, Director of the Public Relations Bureau of the Medical Society of New York, gives a most excellent article on the need of personal talks and letters to our local congressmen by the members of the medical profession to give said congressman accurate, true information of the attitude of the medical profession and to combat to some extent the organized pressure that is put on by the reformers whenever any of the New Deal Legislation is on the make. Of course, the writer has a desire to sit back and say, "I told you so." However, that does no good; we must continue to stress the need of personal contact with the members of Congress and nobody should be so busy even in an epidemic of grippe, flu, or what is it called in your community, to overlook the opportunity to explain the reasons for the medical profession being opposed to radical changes.

With the permission of the writer, one of the articles presented at the Northwest Regional Conference, that by Major G. Seelig, M.D., St. Louis, Missouri on "A State-wide Hospitalization Plan for the Low Income Group" is presented immediately following.

E. S. Hamilton, Chairman.

A STATEWIDE HOSPITALIZATION PLAN FOR THE LOW INCOME GROUP

MAJOR G. SEELIG, M. D.

ST. LOUIS

What prompted the Economics Board of the St. Louis Medical Society to become actively interested, in the few years prior to 1936, in the system of prepaid hospital care that is now known as non-profit and voluntary hospital care insurance? A committee already plagued and irritated by an almost chaotic state of friction between the profession and the hospitals sought relief.

From previous studies and observations of the effects of many movements, both in and out of the profession, there was unfolded to us not only a solution to the pressing problems but also a plan that gave evidence that it could be fitted and coordinated into existing agencies and machinery. Suffice it to say that after six years of preparation, three of it in active administration, our idealistic goal is about to be reached. Grievances, both fancies and real, between the profession and the hospitals were for the larger part eliminated. Well intentioned friends and kindly disposed critics vented the oft quoted saying: "Doctors are not business men." Castigation and abuse from within our own great profession pilloried our early efforts. True, the first believers were not prophets nor did they expect to find within their own ranks the genius to formulate policies and efforts in a statutory form. It was incumbent upon the members of the Economics Board in their responsibility to themselves, the profession and the public, that they secure a competent administrator whose experience and moral character gave evidence of the capacity necessary to institute the new relationships between these three groups. I speak as an individual and not as a committeeman when I say that the right type of Executive Director is, in my judgment, a *sine qua non* to the successful administration of all such undertakings.

It seems unnecessary to relate the short but active history of ethical hospital care insurance plans. There is considerable evidence available which indicates that these voluntary, non-profit plans of social insurance are etching for themselves not only a distinguished but an essential place in the community. The lusty growth of this infant depended not so much on its precocity as upon the solicitous care that was devoted to it through the agency of its executive board under the inspiration and stimulation of the organized profession of St. Louis. The organized medical professions of St. Louis and the State of Missouri were probably the first groups actively to inaugurate such a plan. Pre-eminent in our thoughts and actions was the desire to formulate a social insurance program that would conform strictly to the tenets and ethics of the American Medical Association. We submit that this has been accomplished.

It would be unpardonable not to acknowledge the splendid cooperation from the very outset

which we received from all of the participating hospitals. There has developed a mutual respect for each other that is characterized by the almost incredible fact that the trustees of Group Hospital Service have up to date no record of a complaint from a single hospital, patient or physician.

Early fears of our well intentioned critics have been practically dissipated. The plan is sound financially and the members have an additional safeguard through the guarantee of service by 60 responsible and participating hospitals. Cash reserves after 32 months of operation are sufficient to pay the bills of our members for four months without receipt of even the monthly dues. There is no indication that larger or more publicized hospitals have been given advantages over the smaller institutions. Freedom of choice of physician and hospital has been carefully preserved, but of even greater importance is the fact that not a scintilla of force or duress is placed on any of the cooperating groups—voluntary action is the open sesame of the whole plan.

The public has responded enthusiastically to our professional leadership in the community. Industry likes the provisions for voluntary acceptance by employees, together with the budgetary idea that underlies the plan. The hospitals are exceedingly grateful for the establishment of a plan that does not interfere with their administrative policies as well as for the financial aid accruing to them. Contrast this with certain groups who impose, not only upon a hospital but on the entire community, by seeking preferential rates through numerical purchasing power. Approved hospital service plans pay hospitals on a basis that is fair to both the institution and their members. Patients have not attempted to choose hospitals other than those recommended by their physician.

Doctors have hospitalized many patients under the plan earlier than would have otherwise been possible, because the patient was relieved of the necessity of financing his hospital stay. Abuse has been unquestionably negligible. Complete approval of an ethical plan by the profession has made possible a morbidity incidence and average stay lower than any other comparable plan in the country. The average stay for all patients (5,000) during the past 32 months was 8.5 days.

From a practical viewpoint, this voluntary

plan of social insurance has evolved a program of constructive education among Americans in lower and middle income brackets. Thousands upon thousands of workers and their families are more health conscious; then too, they are taught to budget for at least part of potential illness costs. Granting to the physician all of the finer altruistic motives that are unquestionably his, there nevertheless remains the fact that under this type of operation, the Doctor is more certain not only of receiving his fee but of receiving an adequate fee. It is self evident that a patient who has been hospitalized for 30 days at a total cost to him of approximately \$9.00 is going to have available for his physician an appreciably larger remuneration than if he had spent, as he necessarily would have spent under the old way, some hundred dollars for his hospitalization.

In St. Louis and Missouri our Group Hospital Service does not include such professional services as anesthesia, roentgenology and clinical pathology. Patients pay the hospitals direct for such service. Here again it is self-evident that such a method works for the material benefit of the physician, again, of course, allowing in the broadest way for his altruism. The anesthetist, the roentgenologist and the pathologist instead of being relegated to the category of hospital employees and flunkies are according to this plan ranked with their professional colleagues in the various other specialties of medicine in that they render their own bills and make their own financial arrangements.

My previous statements have been a report on an actuality. The title designated in your program and to which I have been asked to give particular attention, connotes a challenge to those communities where many of their citizens are engaged in agricultural pursuits. It has been said that voluntary plans of social insurance could not effectively serve thinly populated areas, nor serve groups of less cohesion that those represented in urban areas. We wish we could make the statement that success has crowned our efforts in these fields but it is at least heartening to know that Group Hospital Service of Missouri has progressed to the point where a practical beginning has been made in the rural districts.

Before relating steps taken to bring within reach the benefits of this non-profit voluntary plan of hospital care insurance to the farmers

and citizens of small communities, it seems pertinent to state the policy of the Trustees in their approach to this problem. It was both natural and expedient that the center of activity in the establishment of a plan be in the largest city—St. Louis. We could compare conditions and progress with those attained in other cities as well as to compare technical and administrative information to good advantage. With the plan operating in a satisfactory manner, it was only natural that other County Medical Societies would interest themselves, in addition to the people of their own communities, in becoming acquainted with this low cost plan of protection. Our full facilities and help were made available to the Jackson County Medical Society in Kansas City and a trained member of our staff was placed in charge of their own program set up by the Jackson County Medical Society and the local hospitals. This occurred about 18 months after the inauguration of the plan in St. Louis. Continuing pressure from many lay sources seemed to effect the present and future practice of medicine in the American way and warranted this conclusion—that more effective means, together with proper financial stability, could be obtained by the operation of a statewide plan of voluntary hospital care insurance. The Missouri State Medical Association readily approved the state program and the Trustees of Group Hospital Service required, as a prerequisite to participating in the plan, a request from each local County Medical Society to serve that Community.

Our Executive Director was aware of the financial pitfalls to be entailed in such an expensive program to small communities and thinly populated areas. The expense of having properly trained field secretaries in offices established across the State was of much importance. In an effort to find the largest group in the out-state area, we turned to the Missouri Farm Bureau Federation and to their credit is the fact that they were immediately responsive. It seems relatively simple merely to set in operation the administrative machinery for enrollment of our agricultural friends but we were well aware of another and more important aspect. It was the knowledge that many of our citizens scattered over the fields of Missouri were neither health nor hospital conscious. This called for a series

of educational talks by our own staff, as well as the publication of properly prepared articles in the house organ of the Farm Bureau Federation. Sponsorship of Group Hospital Service to the farmers rested in the hands of this Federation and they are to be commended for the amount of educational work they have already accomplished. County Farm Agents and the Home and Community Committees, composed of the ladies, were given the responsibility of enrolling the farmers by county units. Ten months have passed since arrangements were completed to begin the program; the first groups to enroll received their membership certificates last October. Six county units have completed all arrangements for membership; an immediate observation is that the percentage of voluntary acceptance by the farmers is considerably lower than our experience in urban centers. It is only fair to add that higher percentages of rural acceptance might have been obtained but with a disproportionate rise in operating costs.

One question which has been posed is, why these plans do not as a rule enroll individuals. This is one of several factors that makes the problem more difficult for us in our effort to extend the benefits to people in farm communities. It is easy to understand that enrollment and administrative costs are increasingly higher in the enrollment of individuals as compared to groups of individuals. Then too, the matter of collecting monthly dues on a budget basis that is both simple and easy for the people makes for higher operating expenditures. With the great majority of the service plans allocating as much as 80 per cent of their earned income for hospital bills of their members, the problem is obvious. Through the active participation of such an organization as the Farm Bureau Federation, we were able to have payments made on a quarterly basis through their central office, thus eliminating the disadvantages I have just mentioned.

The whole solution to the problem of serving the farmers has not yet been reached, but the continued success of the voluntary plans seems to indicate that there can be a reasonable amount of laxity of enrollment rules indulged in, to provide other methods of centralizing collection for the farmers. We have known of some instances where the local bank or newspaper accepted

monthly payments while some of the plans have utilized the services of the telegraph company.

We feel that the need to educate the people in urban areas to the use of existing medical facilities is of greater importance than even the administrative problem. Progress has been made even in the face of adverse publicity inimical to both the health of the individual and to the practice of medicine. The amount of goodwill for the medical profession engendered by the voluntary social insurance plans cannot be over emphasized, and finally and above all else, to those of us who have a large mental reserve of doubt concerning the precipitous entry of governmental agencies into the high technical field of medical care,—to those of us there is the hope that the various governmental units, whether they be state, federal, county or municipal, will of necessity have to recognize and bow in deference to the altruism of its constituted agencies of organized medicine that have evolved schemes working satisfactorily to the advantage of society as does the particular plan that we with pride have worked out in Missouri.

HOUSE BILL 282, CHIROPRACTIC WHY IT SHOULD BE DEFEATED

The Medical Practice Act of Illinois provides liberally for the granting of license to chiropractors, as well as to the practitioners of all other drugless systems, on the basis of a reasonable amount of general education and specific study of the system for which a license to practice is desired. H. B. 282 is a proposal to lower these established requirements of education and study.

This is shown clearly in the pertinent provisions of the Bill. These are lines 1-4 in Sec. 4, which read "None of the functions, powers or duties enumerated in Section 3 shall be exercised by the Department of Registration and Education except upon the action and report in writing of a Chiropractic Board which shall be composed of three (3) chiropractors . . ." and lines 9-12 of Section 5 which provide that "No school of chiropractic shall be approved by the Department of Registration and Education unless it has a minimum requirement of attendance upon classes for a total of 2421 class hours, of sixty (60) minutes each . . .".

These two quotations from H. B. 282 would (1) clothe a new examining board made up entirely of chiropractors with sole authority for passing on qualifications and standards and (2) would make it possible for applicants for license to qualify after less than twelve months of classroom instruction in the special system of treatment. The bill sets up 2421 class hours specifically as the minimum requirement. This could very easily be done in 12 months of attendance in a school of chiropractic.

Significantly enough, 2421 hours of classroom instruction is exactly the requirement for graduation of the Palmer School of Chiropractic, a fact set forth in the current catalog of this institution which is operated on a commercial basis.

The present Medical Practice Act of Illinois requires that applicants graduating after 1926 shall have spent at least four years of not less than eight months each in a standard school of chiropractic before they can qualify for a license. A minimum aggregate of 36 months of residence study in the school of chiropractic is required. These minimum requirements, which apply alike to applicants for license of all forms of drugless practice, would appear to be low enough for practitioners who propose to deal professionally with human life and health.

It appears plainly, therefore, that H. B. 282 is a proposal to grant special privilege to chiropractors as a class, on the one hand, and to lower the standards now prevailing for the licensure of chiropractors on the other. What other valid reasons would there be for a new law covering a matter already adequately and reasonably covered in the general provisions of the Medical Practice Act which apply alike to all systems of drugless healing? No applicant who meets the qualifications set forth in this well considered law, that has been upheld by the Supreme Court in many decisions, is denied a license to practice in Illinois.

The enactment of H. B. 282, might furthermore be interpreted to repeal all of the Medical Practice Act relating to drugless practitioners, opening the way for an influx of any and all drugless healers which might choose to set up practice in the State. Sec. 26 of H. B. 282 pro-

vides that "*All Acts and parts of Acts in conflict herewith are hereby repealed.*"

This Bill is not in the public interest but proposes to confer special privilege and to reduce the standards of qualifications of drugless healers at a time when educational requirements in all pursuits of life are becoming more rigorous and ought therefore to be defeated.

HOUSE BILL 293 ON OSTEOPATHY WHY IT SHOULD BE DEFEATED

Are registration laws enacted to grant special class privileges or to impose professional responsibilities and to protect the people generally? How much and what kind of training should men and women have before being licensed *to use the knife* on or *prescribe drugs* for the sick and ailing—to take human life in their hands? These are the crucial questions raised in H. B. 293, For an Act in Relation to the Practice of Osteopathy, the aim of which is plainly to grant special privilege by reducing in favor of osteopaths only the standards of the Medical Practice Act.

The heart and purpose of this bill are expressed in 8 lines. Sec. 4, lines 1-4, read as follows:

"None of the functions, powers or duties vested in the Department of Registration and Education by this act shall be exercised except upon the action and report in writing of an Examining Committee which shall be composed of five reputable osteopathic physicians . . .".

Lines 3-6 in Sec. 11 declare that

"Any rights or privileges granted or duties conferred under the laws of this State upon medical practitioners who are licensed to practice medicine in all its branches shall include and apply with equal effect to osteopathic physicians licensed under the provisions of this Act."

Here, clearly, is a request that osteopaths be granted the special privilege of (1) practicing medicine and surgery in *all its branches* without qualifying under the Medical Practice Act and also the privilege of (2) being their own judge and jury as to fitness for the responsibilities of using the knife and prescribing drugs. They ask for an examining board entirely of osteopaths with power to dictate the functions of the Department of Registration and Education with reference to osteopathy.

Reasons given for asking special privilege.—The reasons given by osteopaths for this request, as set forth in a pamphlet entitled "The Need for a Modern Law in Illinois," which has been distributed among all members of the General Assembly, are that (1) Illinois is one of only five States which deny osteopaths recognition on the Medical Examining Board, (2) that osteopaths have been discriminated against by the Department of Registration and Education in Illinois, and (3) that the training of osteopaths justifies equality with physicians licensed to practice medicine in all its branches. Official records, open to anyone who cares to consult them, show that neither of these contentions is valid. The facts as established by official records, relating to each of these three principal contentions are set forth below.

Osteopath now on examining committee.—Concerning *recognition*, let it be said that an osteopath, Dr. O. C. Foreman of Chicago, has been attached to the Illinois Medical Examining Board for many years, giving the examination in osteopathy required of applicants for an osteopathic license. He attends *all* meetings of the Board that have to do with licensure. This plainly gives the osteopathic profession official recognition.

100% Osteopathic Applicants Were Licensed in 1938.—As to *discrimination*, the official records of the Department of Registration and Education show that during 1938, a license to practice osteopathy in Illinois was granted to *every applicant*, a total of 32, who applied to the Medical Examining Board for examination, favorable action of 100% on the part of the Board.

Of the 32 licenses granted, 25 were given on the basis of examination and 7 on the basis of reciprocity. License to practice osteopathy was granted at each of the four regular meetings of the Board, 1 in January, 2 in April, 27 in June and 2 in October. These facts from the official records manifestly disclose no trace of discrimination against osteopaths.

Evidence of Limited Training of Osteopaths.—With respect to *training*, the crux of the whole matter and of overshadowing importance to the sick and ailing, let the latest catalog of the Kirksville College of Osteopathy, the largest osteopathic school in the country, and the latest catalog of the Medical College of the University

of Illinois be the guide to a fair and honest conclusion. The Kirksville catalog shows approximately 200 senior students and on page 35 lists a faculty of *one* professor and *three* assistant professors. Only one of these four claims an M.D. degree, and he an eye, ear, nose and throat specialist, but his name appears neither on the list of physicians practicing in Kirksville, Mo., nor in the 1938 edition of the American Medical Directory. Furthermore, the city of Kirksville has a population of less than 10,000, seriously limiting the volume of clinical material for instructional demonstration and experience for osteopathic students. The text books listed in the Kirksville catalog, moreover, with the exception of those relating entirely to osteopathy, are the standard text books used in medical colleges generally. Thus there are at Kirksville College of Osteopathy about 50 senior students per faculty member who must be severely limited in clinical material for teaching purposes and who depends upon text books instead of training and experience in surgery and the prescribing of drugs.

Training at Illinois University Medical College.—At the Medical College of the University of Illinois, on the other hand, there are about 160 senior students and a faculty of more than 50 in the department of surgery alone. All of these faculty members are recognized, competent surgeons, many enjoy national reputations and several are authors of standard text books on surgery. The situation is similar in the other departments. An abundance of clinical material from Chicago and vicinity is always available for demonstration and for the experience of medical students under competent supervision. All of the other Grade A Medical Colleges in Illinois, moreover, offer teaching facilities equivalent to those at the medical college of the University of Illinois.

Rapid Advancement in Medical Science.—Both surgical procedures and the use of drugs for the prevention and care of human ailments have developed with amazing rapidity within the last decade. The practice of surgery and the prescription of drugs require the ultimate in training, skill and knowledge if sick people or those threatened are to be benefited rather than injured by medical care. Such drugs as sulfanilamide, for example, are astonishingly beneficial

or highly dangerous, depending upon the circumstances under which they are given.

The maintenance of reasonably high standards in medical practice make it imperative, therefore, to require of applicants for license to practice surgery and medicine in all its branches a more technical and exhaustive examination than of applicants for the practice of osteopathy and other drugless professions.

Chicago Now the Medical Vienna.—Fundamentally, the proposal of H.B. 293 is to lower the standards of medical practice in Illinois by granting special class privilege at a time when this State is rapidly becoming the outstanding center of medical education in the world. Chicago has already assumed the enviable worldwide reputation in the field of medical science and education that was once enjoyed by Vienna. The unexcelled teaching and clinical facilities in Chicago are already attracting physicians from all parts of the world for post graduate study and observation.

Medical Leadership Requires Defeat of H.B. 293.—Adoption of the proposal in H.B. 293 would be, therefore, a distinct step backward for Illinois. Falling in line with other States in this respect smacks of *imitation* instead of *leadership*. From every reasonable consideration of the public and of the science of medicine, H.B. 293 ought to be defeated.

J. R. Neal, M.D., Chairman
Legislative Committee.

DO YOU WANT YOUR DOCTORS CHOSEN AND THEIR MEDICAL SERVICE CON- TROLLED BY THE KIND OF MEN THAT HANG AROUND THE COURT HOUSE?

An editorial in *America's Future*, November, 1939, says of socialized medicine: Shall we turn medicine over to politics? Shall we make doctors and surgeons into politicians, or men dependent on politicians? Shall we degrade a great profession and the service it renders? These are some of the questions which the drive for socialized medicine is bringing to the fore. No doubt the profession of medicine is like most other professions in need of improvement. But is improvement to be found in control of medicine by the state?

American doctors seem to have done a really

fine job. They have diminished the general death rate very rapidly as well as the special death rates for such common and heretofore deadly diseases as diphtheria, scarlet fever, smallpox, typhoid and tuberculosis. In fact, they lead the world in control of such diseases. In the last fifty years the expectancy of life has been more than doubled in our country.

On the other hand, in countries where social medicine has been provided by a state, progress has been slower.

A fair conclusion seems to be that the reforms required in medicine will be achieved more effectively and cheaply, and with far better results measured in human welfare, by keeping medicine out of the hands of politicians, who presumably would include it, as they have included relief, in a sordid game of patronage, graft and personal aggrandizement.

One might rather bluntly sum up the question by asking—do the people want to pay from half a billion to a billion more taxes each year in order to have their doctors chosen and their medical service controlled by the kind of men that hang around the courthouse?

IS IT NOT HYPOCRISY FOR THE GOVERNMENT TO CHARGE AND PROSECUTE ONE GROUP UNDER ANTI-TRUSTS LAWS AND AT THE SAME TIME PROTECT ANOTHER GROUP WITH LAWS WHICH FURTHER IT AS A MONOPOLY?

The *Chicago Journal of Commerce*, August 3, 1938, in an incisive comment on the Government's action in prosecuting the A. M. A. with being a monopoly under the title "Medical Monopoly" says:

"While not agreeing with Assistant Attorney General Thurman Arnold, who knows more things that ain't so than does Secretary Wallace, yet even an airing of a healthy situation can do a lot of good. If the American Medical Association has nothing to cover up, and if it is proved that the probe of the department of justice is based on false assumptions, the *Association's prestige will be increased by the airing.* (Italics ours.)

All of this is said, however, on the assumption that the Association will get its day in court and be treated fairly by the probers. *As much cannot be said of the probes conducted up to*

date. However, the Medical Association is in vigorous hands and there is nothing to prevent them from taking their case to the people.

In their favor is the fact that the public is getting tired of these mass attacks and these mass prosecutions. They no longer have the news appeal they had at the beginning. The people are demanding the truth in simple form and the Association should waste no time in presenting its case.

By the same token, however, the medical profession of the country should examine its affairs with a magnifying glass and leave no stone unturned to make sure that it is doing all that it can to meet the needs of modern society. As we pointed out here the other day, discussing chain stores versus co-operatives, if the co-operatives really and actually perform a service more beneficial and more economical to the largest number than any other form, the co-operative is on the way in. No amount of resistance can stop it. Likewise, if it doesn't serve as well as the existing system, all of the Thurman Arnolds and all of the government probes and all the machinery of the co-operatives with their exemptions and privileges cannot permanently displace the existing system.

But wouldn't you think the bright young men who are running things temporarily at Washington would occasionally reflect on the trouble they may be making for themselves by their inconsistencies? The service of a doctor is not regarded as "labor" in the customary sense. And yet, unless you make an arbitrary decision as to its meaning, a group of doctors who enforce conditions on their employers through collective action are in truth doing only what a labor union does. *It is difficult to see how the government can charge one group with being a monopoly and prosecute it under anti-trust laws and at the same time protect the other with laws which further it as a monopoly.* (Italics ours.)

Back in 1934 there appeared a strip cartoon showing the New Deal in the role of a juggler who, while keeping six or seven balls in motion, was being handed additional balls from time to time. Eventually he missed one ball and all fell to the floor.

The monopoly charge against the doctors, because it grows out of an expenditure made by the HOLC—which congress did not authorize—to set up a health co-operative for government

employees, may turn out to be the fatal "one too many" balls. (Italics ours.) Labor cannot afford to have any legal precedents established making collective action amendable to anti-trust laws."

VERMONT WANTS NO PART IN ANY PLAN WHICH WOULD PERMIT POLITICAL SELECTION AND DIRECTION OF DOCTORS BY THE GOVERNMENT

Governor Aiken, in his message to the Vermont State Legislature, January 5, 1939, said: We recognize that many people who should be getting medical care or hospitalization are not now receiving it. It is also an accepted fact that much improvement could be brought about through co-operative efforts by communities or on a state-wide basis.

There may be federal legislation concerning health insurance. Vermont wants no part in any plan which would permit political selection of doctors or the direction of their activities by the government. But we ought to be ready to co-operate either among ourselves, with the people of other states or with the federal government on any plan providing for co-operative and voluntary efforts to promote better health among our citizens.

Hospitals, doctors and laymen in Vermont are all working towards this end. It may be that some plan will be devised before this legislature adjourns that will appear practicable and will permit the broadening of our present sporadic efforts to a statewide basis. If such a plan is devised and legislation appears necessary to make it effective, I hope such legislation will be enacted.

CAN IT BE AN INDICATION OF RETURNING SANITY IN GOVERNMENT?

The *Westchester Medical Bulletin*, February, 1939, comments as follows on Governor Lehman's message to the New York Legislature:

"I believe," said Governor Lehman of health insurance, in his most recent message to the Legislature, "it is our duty to recognize the great interest the medical profession has in this entire subject."

We believe the Governor is telling a cockeyed

world! He is, in our opinion, a 100 per cent. recognizer!! He asks the Legislature not to commit itself to any large expenditure (on health insurance) until after a thorough survey by a commission consisting of public health experts, legislators, and *representatives of the medical profession*.

The recognition by the State's Chief Executive of medicine's interest in this subject is almost uncanny in its penetration to the heart of a matter which has seemed to many obscure, immaterial and irrelevant. Can it be an indication of returning sanity in government? Could it possibly presage the dawn of a new day; a day when—Hallelujah!—legislators might just conceivably perceive in that dawn's early light the great and enduring truth that *The Health of the People Is the Direct Concern of the Medical Profession?*

Correspondence

ARE YOU LICENSED TO PRACTICE BOTH LAW AND MEDICINE?

Boston, Mass., Feb. 16, 1939.

To the Editor:

I am being impressed with the number of professional men who hold degrees as Doctors of Medicine and who also have received degrees from accredited law schools and are admitted to practice before the several courts of their states and country.

An effort is being made to secure and list all persons who possess the rights to practice medicine and law and who hold unrevoked licenses to engage in these two professional activities. The information is not obtainable from medical or law directories.

An appeal is therefore being made that persons holding the right to practice medicine and law send their name, address, and data pertaining to their education in medicine and law to the undersigned. It will be appreciated also if a statement is included as to whether full time is devoted either to law or to medicine or whether the person engages in the practice of both professions.

American Medico-Legal Association,
Frederick C. Wannshuis, M. D.,
President and Editor-in-Chief,
137 Newbury Street, Boston.

ILLINOIS STATE MEDICAL EDITORS' ASSOCIATION

The first annual banquet and meeting of the Illinois State Medical Editors' Association will be held in connection with the annual meeting in Rockford on Tuesday evening, May 2, 1939, at 6:00 o'clock. Medical editors, members of boards of censors, and business managers from the Central States have been invited to attend this meeting.

Dr. Emil Z. Levitin, Suite 616, Jefferson Building, Peoria, as general chairman for this group, is arranging a suitable program, which will be published in full in the April ILLINOIS MEDICAL JOURNAL.

Reservations for the banquet should be made before April 30 with Dr. Levitin; tickets for the banquet and meeting will be \$2.50. Dr. Kenneth H. Schnepf of Springfield, president of the Association, will act as toastmaster. Officers for the next year will be elected at the meeting, and a program of work outlined by Dr. George W. Dryer of Moline, secretary of the Association, will be presented.

Charter members include the Peoria Medical News, Adams County Medical Bulletin, Rock Island County Medical News, and the Bulletin of the Sangamon County Medical Society. The Evanston Branch of the Chicago Medical Society and the Bulletin of the St. Clair County Medical Society have applied for membership in the Association. So far as is known, this is the only group of its kind which strives to improve medical journalism for county medical societies.

All physicians who are interested in this work are urged to attend the banquet and meeting on the evening of May 2, 1939, at Rockford.

THE SCIENTIFIC EXHIBIT AT THE ROCKFORD MEETING

From the applications already at hand, it appears that the Scientific Exhibits at Rockford will be of great interest and most instructive. It was at the last Rockford meeting that your Committee was for the first time functioning, and the 1939 exhibit will show how much it has been able to accomplish in five years. The exhibit this year will occupy the garage adjoining the Faust Hotel and opening off its lobby, the lobby itself and available space on the mezzanine floor.

The awards in the Scientific Exhibit and in the Hall of Health will be made by a special committee on awards.

Committee on Scientific Exhibits:

J. S. Templeton,
Paul Harmon,
N. S. Davis, III.

THE HALL OF HEALTH AT THE ROCKFORD MEETING

The Council has decided to arrange for the second time a Hall of Health containing exhibits for education of the public. At Rockford, the Hall of Health is to be located in the new Armory which is situated across the river, several blocks away from the Faust Hotel.

The Armory furnishes an ideal site for such exhibits and also much more space than was available last year. Many who exhibited last year will exhibit again and new and more extensive exhibits have been obtained.

To promote interest in the Hall of Health an essay and poster contest for pupils in the grade and junior high schools of the area has been arranged. Cash awards and certificates of merit will be awarded to the winners. The posters will be exhibited in the Hall of Health and proper publicity will be given to the winning essays. The topic for these contests is "The Family Doctor."

The usual silver and bronze medals and certificates of merit will also be awarded for the best exhibits in the Hall of Health.

Committee on Hall of Health:

R. R. Ferguson	Tom Jones
Jean McArthur	H. E. Landes
E. B. Bay	Harold J. Noyes
C. C. Clay	N. S. Davis, III.

PNEUMONIA CONTROL

Dear Doctor:

Pneumonia ranks third as a cause of death. The State of Illinois has inaugurated a control program aimed at the reduction of mortality from this cause.

The Illinois Department of Public Health has approved laboratories in various parts of the state where rapid, accurate bacteriologic diagnosis of pneumonia cases may be obtained and

is providing, without cost, serum for Types I, II, IV, V, VII, and VIII.

Bacteriological specimens must be typed by an approved laboratory. On receipt of the laboratory findings, serum will be issued by one of five designated serum centers. The location of these laboratories and distributing centers is shown in the enclosed list. Containers for the collection of sputum may be obtained at regular state distributing points for biological supplies and at the approved typing stations.

The complete regulations governing free distribution of antipneumococcic serum are enclosed. Your co-operation is solicited.

The effectiveness of antipneumococcic serums in combating pneumonia has been amply demonstrated. If the physician will make full use of the control measures now at his disposal, he will aid materially in reducing the death rate of this serious disease.

Yours very truly,
A. C. Baxter, M. D.,
Acting Director,
Department of Public Health.

REGULATIONS GOVERNING FREE DISTRIBUTION OF ANTIPNEUMOCOCCIC SERUM BY ILLINOIS STATE DEPARTMENT OF PUBLIC HEALTH

1. Bivalent horse serums of Types I-II, V-VII, and IV-VIII will be supplied without cost to the patient.

2. One hundred thousand (100,000) units of serum will be issued for Types I, IV, V, VII and VIII and two hundred thousand (200,000) units for Type II cases. The physician should request a larger amount of serum in cases of multiple lobe involvement, bacteremia, pregnancy or the puerperium and age beyond 40.

3. In order to obtain serum, the sputum or other specimen from the pneumonia patient must have been typed in a laboratory approved by the Illinois Department of Public Health of pneumococcus typing.

4. A request for antipneumococcic serum and bacteriological examination must be filled out on the official form provided and must accompany the specimen submitted to the laboratory.

5. Because of the emergency involved, the specimen should be presented by the physician or by a messenger who will wait for the typing to be done and then take the laboratory report together with the original request card to the nearest serum center for issue of the appropriate serum.

6. Only that type of serum will be issued which corresponds to the type of pneumococcus found.

7. The patient must have had pneumonia less than 96 hours at the time of submission of specimen.

8. By availing himself of the pneumococcus typing service offered, whether serum is actually used or not, the physician obligates himself to submit a Physician's Pneumonia Case Report on a blanket supplied by the typing laboratory.

9. The physician is required to report all cases of pneumonia to the local Health Department in the usual manner, by telephone or on a communicable disease morbidity report card.

10. All unused vials of serum should be promptly returned to the serum center from which obtained.

APPROVED LABORATORIES—CHICAGO METROPOLITAN AREA

Laboratories Approved by the Illinois Department of Public Health for Pneumococcus Typing and Centers Designated for the Free Distribution of Antipneumococcic Serums

All serum centers are equipped to render 24-hour service for pneumococcus typing and serum distribution. State Branch Laboratories and local Departments of Health will do typing without cost. Other laboratories will charge their regular fee.

NORTHERN DISTRICT

Serum Center and Typing Station

1. Evanston Health Department, 1806 Maple Avenue, Evanston.
2. Evanston Hospital, 2650 Ridge Avenue, Evanston.
- Typing Stations
3. Victory Memorial Hospital, 1224 Sheridan Road, Waukegan.
4. Edgewater Hospital, 5700 North Ashland, Chicago.

CENTRAL DISTRICT

Serum Center and Typing Station

1. Branch Laboratory, Ill. Dept. of Public Health, 1800 West Fillmore, Chicago.
- Typing Stations
2. Chicago Board of Health, City Hall, 121 North LaSalle, Chicago.
3. Passavant Memorial Hospital, 303 East Superior Street, Chicago.
4. Presbyterian Hospital, 1753 West Congress St., Chicago.
5. Research & Educational Hospital, Polk and Wood Streets, Chicago.
6. Cook County Hospital, 1828 West Polk Street, Chicago, Illinois.

SOUTHERN DISTRICT

Serum Center and Typing Station

1. Billings Memorial Hospital, 950 East 59th Street, Chicago.
- Typing Stations
2. St. Luke's Hospital, 1439 South Michigan Avenue, Chicago.
3. Michael Reese Hospital, 2900 Ellis Avenue, Chicago.
4. Mt. Sinai Hospital, 2750 West 15th Place, Chicago.
5. St. Anthony dePadua Hospital, West 19th and South Marshall Blvd., Chicago.

6. Chicago Memorial Hospital, E. 33rd & S. Lake Park Avenue, Chicago.
7. Englewood Hospital, 6001 South Green Street, Chicago.

WESTERN DISTRICT

Serum Center and Typing Station

1. Oak Park Health Department, Euclid Avenue and Lake Street, Oak Park.
2. West Suburban Hospital, 518 North Austin Blvd., Oak Park.

Typing Stations

3. Westlake Hospital, 612 North 12th Avenue, Melrose Park.
4. Oak Park Hospital, 525 Wisconsin Avenue, Oak Park.

List as of February 4, 1939. Revised lists will be issued as additional typing stations are approved.

DIRECTIONS FOR COLLECTING SPUTUM

1. Care should be taken that the specimen raised by coughing is pulmonary exudate, not nasopharyngeal secretion or saliva, and that it is examined within two hours following expectoration by the patient.

2. The specimen should consist of approximately a teaspoonful collected in a container that is clean, preferably sterile, and free from antiseptics and preservatives.

3. If there is difficulty in obtaining sputum, the following procedures are recommended: strapping the chest to prevent pleural pain while coughing; turning the patient on the healthy side with head low, followed by percussion over affected side; irritation of the pharynx with a swab to induce retching; or a hot drink may promote expectoration.

4. In the absence of a satisfactory specimen of sputum, aspiration of the trachea with a soft rubber catheter may suffice. If not, mucus may be swabbed from the back of the throat during the act of coughing.

5. Specimens should be collected either by the physician or nurse and not left to some member of the family.

6. It is urged that blood cultures be taken in all cases in which a presumptive diagnosis of pneumonia is made, for the purpose of checking the type and determining the dosage of serum.

VETERAN'S SERVICE COMMITTEE DINNER

PRELIMINARY PROGRAM

1. Presentation of Colors.
Commander Rockford American Legion Post.
2. Bugle: To the Colors.
3. Expansion of the Medical Idea in Veteran Organizations.
Dr. Overton Brooks,
Commander Medical Post.
Lt. Commander M. C. Naval Reserve.

4. Remarks:

Edward Clamage,
Commander Department Illinois American Legion.

5. Remarks:

Col. Robt. C. Bourland.
Moment of Silence
Retirement of Colors.

ACTIVITIES OF WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

County News—Sangamon County Auxiliary held a Laity Meeting, February 13th, at the Abraham Lincoln Hotel. Dr. G. Henry Mundt of Chicago spoke on "Socialized Medicine."

Vermilion County Auxiliary held their February meeting at the Hotel Walford. Dinner was followed by the business meeting. A skit concerning parliamentary law was presented. Mrs. George Cass was in charge of the program. An open meeting is to be held April 4 in conjunction with Health Week.

The State Board met January 28th at the Palmer House in Chicago in all day session. Mrs. William Raim presided.

St. Clair County planned an enjoyable meeting for February. The speaker, Miss Moeller, the subject "Interior Decoration." The March meeting is to include a report on current legislation by Mrs. Harvey S. Smith and the speaker Dr. E. C. Taylor, reading three Irish plays.

Cook County members and guests attended a luncheon meeting February 1st. Dr. John R. Neal of Springfield, chairman of the Illinois State Medical Society, spoke on the "Current Legislative Problems." The March meeting is a membership tea. Every member is urged to bring a guest, a physician's wife not a member of the Auxiliary at present. Mrs. Raim will make a short talk on the Auxiliary. Mr. Raim is State President.

Convention Ahead!

The Woman's Auxiliary to the Illinois State Medical Society will meet in convention May 2nd and 3rd at Rockford. Mrs. Fringer is local chairman and Mrs. H. J. Dooley of Cook County auxiliary chairman. A complete program will be printed later. Watch the *JOURNAL*.

Presidents of organized counties in Illinois are as follows:

Adams—Mrs. R. A. Harris, Quincy.
Bureau—Mrs. M. A. Nix, Princeton.
Coles-Cumberland—Mrs. C. D. Swickard, Charleston.
Cook—Mrs. Frank G. Murphy, Chicago.
Douglas—Mrs. Myron Boylson, Tuscola.
Kane—Mrs. Charles Potter, St. Charles.
Knox—Mrs. W. Forrester Maley, Galesburg.
Livingston—Mrs. B. A. Richardson, Emington.
Marion—Mrs. H. O. Williams, Centralia.
McLean—Mrs. Gordon Schultz, Bloomington.
Perry-Randolph—Mrs. Ralph May, Chester.

Rock Island—Mrs. Paul Youngberg, Rock Island.
 Sangamon—Mrs. O. E. Ehrhardt, Springfield.
 St. Clair—Mrs. H. M. Varis, East St. Louis.
 Vermilion—Mrs. E. F. Dietrich, Fithian.
 Warren—Mrs. C. O. Burgess, Monmouth.
 Will-Grundy—Mrs. H. V. Wadsworth, Joliet.
 Woodford—Mrs. E. Pearson, Eureka.
 Crawford—Mrs. A. L. Lowe, Robinson.

MRS. C. OTIS SMITH, *Chairman of Publicity.*

SECTIONAL MEETING OF THE AMERICAN COLLEGE OF SURGEONS

A Sectional Meeting of the American College of Surgeons will be held in Indianapolis, Indiana, with headquarters at the Claypool Hotel, on March 22, 23, and 24, 1939. The following states will participate:

Indiana	Ohio
Illinois	Wisconsin
Michigan	Iowa

The Committee on Local Arrangements, which is making plans for an exceptionally interesting meeting has for its officers: Dr. Carl H. McCaskey, Chairman, Dr. Cleon A. Nafe, Vice Chairman, and Dr. Jacob K. Berman, Secretary. A general outline of the program is as follows:

Wednesday, March 22

8:00-9:00—Registration and general information for Fellows of the College, hospital representatives, and guests.

9:00-11:00—Operative and non-operative clinics; general surgery and the surgical specialties.

10:00-12:30—Hospital conference.

11:30-12:30—Midday panel discussions.

12:30-2:00—Inspection and study of educational and scientific exhibits.

2:00-4:30—Clinical assembly.

2:00-5:00—Hospital conference.

2:30-4:30—Medical motion pictures, eye, ear, nose and throat surgery.

4:30-5:00—Meeting of Fellows.

5:00-5:30—Meeting of the State Executive Committees, State Credentials Committees, and State Judiciary Committees.

5:00-6:00—Inspection and study of educational and scientific exhibits.

6:30-8:00—Medical motion pictures, general surgery.

8:00-10:00—Scientific meeting, general surgery.

8:00-10:00—Medical motion pictures, eye, ear, nose and throat surgery.

8:00-10:00—Hospital round table conference.

Thursday, March 23

8:00-9:00—Registration and general information for Fellows of the College, hospital representatives, and guests.

9:00-11:00—Operative and non-operative clinics; general surgery and the surgical specialties.

10:00-12:30—Hospital conference.

11:30-12:30—Midday panel discussions.

12:30-1:30—Inspection and study of educational and scientific exhibits.

12:45-2:00—Luncheon, Governors of the College.

1:30-2:30—Medical Motion pictures: 1. General surgery. 2. Eye, ear, nose and throat surgery.

2:00-5:00—Hospital conference and demonstrations.

2:30-5:00—Clinical assembly.

5:30-6:00—Inspection and study of educational and scientific exhibits.

6:30-8:00—Dinner.

8:00-10:00—Scientific meeting, general surgery.

8:00-10:00—Scientific meeting, eye, ear, nose and throat surgery.

8:00-10:00—Hospital motion pictures.

Friday, March 24

8:00-9:00—Inspection and study of educational and scientific exhibits.

9:00-11:00—Fracture clinic.

9:00-11:00—Operative and non-operative clinics, eye, ear, nose and throat surgery.

10:00-12:30—Hospital conference, panel discussion.

11:00-12:00—Conference of State Fracture Committees.

11:30-12:30—Midday panel discussions.

12:30-2:00—Inspection and study of educational and scientific exhibits.

1:30-2:30—Medical motion pictures, eye, ear, nose and throat surgery.

2:00-5:00—Hospital conference, panel discussion.

2:30-4:30—Cancer clinic.

2:30-5:00—Scientific meeting, panel discussion, eye, ear, nose and throat surgery.

8:00-10:00—Medical motion pictures, general surgery.

8:00-10:00—Public meeting—Conservation of Health.

There will be present a number of distinguished visiting surgeons from various parts of the country who will address the sessions, and among these are: Dr. Howard C. Naffziger of San Francisco, president of the American College of Surgeons; Dr. George Crile of Cleveland, chairman of the Board of Regents; Dr. Frank E. Adair of New York, Attending Surgeon, Memorial Hospital; Dr. Frederic W. Bancroft of New York, Associate Professor of Clinical Surgery, Columbia University College of Physicians and Surgeons; Dr. George H. Gardner of Chicago, Assistant Professor of Gynecology, Northwestern University Medical School, and others.

In addition to the operative and non-operative clinics in general surgery and the surgical specialties which are, as is customary at these sectional meetings, scheduled on each of the three mornings in local hospitals, there will be clinical assemblies held at the Claypool Hotel. Panel discussions have been arranged from 11:30 to 12:30 o'clock on each of the three days. The subjects of these will be: End Results in Gall Bladder Surgery; Evaluation of Cancer Therapies; Some Phase of Thoracic Surgery; Reduction in Mortality of Appendicitis; Hypertension and Its Surgical Aspects; Abnormal Uterine Bleeding; Effects of Obstruction in the Urinary System on Infection; Toxemias of Pregnancy with Special Consideration of Their Ultimate

Effects on the Patient; and Medical and Surgical Aspects of Peptic Ulcer with Special Reference to Hemorrhage.

There will also be a hospital conference, consisting of papers, panel discussions, round table conferences, and demonstrations dealing with administrative and professional problems in hospitals. In addition, a highly interesting and instructive program of medical motion pictures will be shown daily, covering surgical technique and other phases pertaining to general surgery, eye, ear, nose and throat surgery, and the other specialties. Special attention is directed to a fracture clinic on the morning of Friday, March 24, and to a cancer clinic in the afternoon of the same day. The meeting will close with a session open to the public on the subject of Conservation of Health.

Graduate training for surgery and the surgical specialties will be discussed at both the hospital and surgical sessions.

The medical profession at large, as well as hospital trustees, superintendents, nurses, and other hospital departmental personnel, will be interested in this meeting, at which there will be no registration charge. Members of the State Medical Association are most cordially invited to attend.

ANNUAL SPRING CLINIC OF THE ST. JOSEPH CLINICAL SOCIETY

The St. Joseph Clinical Society will hold its eighth annual spring clinic on March 28th and 29th, at the Hotel Robideaux, St. Joseph, Mo. There will be no registration fee. The purpose of the meeting is to offer a concentrated post-graduate course in recent advances in clinical medicine and surgery as interpreted by eminent clinicians who will be our guest speakers. The St. Joseph Clinical Society extends a cordial invitation to all members of the medical profession who may wish to be our guests at this clinical gathering.

Dr. Gershom J. Thompson: "Transurethral Prostatic Resection."

Dr. Q. W. Newell: "Cancer of the Uterus."

Dr. Fred J. Taussig (round table discussion): "Treatment of Septic Abortion."

Dr. F. J. Taussig: "The Co-ordination of Radium with Surgery in the Treatment of Cervix Cancer."

Dr. Willis C. Campbell: "Some Aspects of Surgery of the Hip Joint."

Dr. Heyworth N. Sanford: "Jaundice in the New Born."

Dr. Heyworth N. Sanford (banquet): "Some Observations on Disturbances of Blood Coagulation."

Dr. August A. Werner: "The Effect of the Ductless Glands in Growth and Development."

Dr. Ralph A. Kinsella: "The Pneumonias."

Dr. Walter C. Alvarez: "Useful Hints in the Treatment of Indigestion."

Dr. Maurice C. Howard: "Problems of Gastric Hemorrhage."

Dr. Morris Fishbein (noon luncheon): "American Medicine and the National Health Program."

Dr. Morris Fishbein (open public address): "The Social Aspects of Medical Care."

Dr. J. A. Myers: "Modern Methods in Diagnosis and Therapy of Tuberculosis."

Dr. Coyne H. Campbell: "Practical Points in the Management of Neurotic Symptoms, Inhibitions and Anxiety."

Dr. Manuel Grodinsky: "Pyogenic Infections of the Hand and Foot."

WHY DID JIMMY SELECT A PRIVATE IN PREFERENCE TO A GOVERNMENT HOSPITAL?

Jimmy Roosevelt is a bright boy who has gone far despite, as he says, the handicap of being a President's son. But, like the rest of us, he has his weaknesses. His are peptic ulcers.

Recently, he had to choose a doctor. It would be interesting to know his thoughts in his hour of sickness.

Did he feel, like his father, that his ulcers were a "public problem," rather than a medical one? Was he swayed by his mother's enthusiastic endorsement of Washington's Federal health clinic? Did he rush to a nearby Government hospital?

No.

In spite of the inconsistency, the inconvenience, and the expense, he hot-footed halfway across the continent to the Mayo Clinic, where he could secure the best of private care.

We wonder if there isn't a moral in this for Father, Mother, and the rest who would deny millions a privilege they reserve for themselves.

—Exchange.

SOCIALIZATION OF BEAUTY

The following bit of satire taken from Clause Callan's column "Folks & Foibles" *Kansas City Times*, September 29, 1938, is so in harmony with present attempt to socialize all public and private activities. If the present Washington trend were not so tragic, it would be laughable. The satire is reproduced for your amusement.

"Why can't we have government beauty parlors, with beauty furnished equally to all women? The government is planning to take charge of the health of the whole people, and surely no woman considers health as important as beauty. Under the present system of private ownership of beauty parlors and private manufacture of beauty sauces, some women are able to buy all the beauty on the market, while some must be satisfied with soap and water on their faces. As a result, some are always in the happy disposition of being beautiful enough to break up homes, while others are in danger of having their homes broken up. Let the government take over beauty and dispense it with a lavish and impartial hand."—B. Coli, *Jackson County Medical Society Weekly Bulletin*.

THE SAMUEL D. GROSS PRIZE

FIFTEEN HUNDRED DOLLARS

Essays will be received in competition for the prize until January 1, 1940.

The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 19 S. 22d St., Philadelphia," on or before January 1, 1940.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

EDWARD B. HODGE, M. D.,
CHARLES F. MITCHELL, M. D.,
CALVIN M. SMYTH, JR., M. D.,
Trustees.

AMERICAN ASSOCIATION FOR THE STUDY OF GOITER

Announcement of Van Meter Prize Award

The American Association for the Study of Goiter again offers the Van Meter Prize Award of Three Hundred Dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The Award will be made at the annual meeting of the Association, which will be held in Cincinnati, Ohio, on May 22nd, 23rd and 24th, 1939, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English; and a typewritten double spaced copy sent to the Corresponding Secretary, Dr. W. Blair Mosser, 133 Biddle Street, Kane, Pennsylvania, not later than April 15th, 1939. The Committee who will review the manuscripts is composed of men well qualified to judge the merits of the competing essays.

A place will be reserved on the program of the annual meeting for presentation of the Prize Award Essay by the author if it is possible for him to attend. The essay will be published in the annual Proceedings of

the Association. This will not prevent its further publication, however, in any Journal selected by the author.

THE ANNUAL FOUNDATION PRIZE IS ONE HUNDRED DOLLARS

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons announces that the annual Foundation Prize for this year will be \$100.00. Those eligible include only 1. interns, residents, or graduate students in Obstetrics, Gynecology and Abdominal Surgery, and 2. physicians (M. D. degree) who are actually practicing or teaching Obstetrics, Gynecology or Abdominal Surgery.

Competing manuscripts must 1. be presented in *triplicate* under a nom-de-plume to the Secretary of the Association before June 1, 2. be limited to 5,000 words and such illustrations as are necessary for a clear exposition of the thesis, and 3. by typewritten (double-spaced) on one side of the sheets, with ample margins.

The successful thesis must be presented at the next annual (September) meeting of the Association, without expense to the Association and in conformity with its regulations.

For further details, address Dr. James R. Bloss, Secretary, 418 11th Street, Huntington, W. Va.

CLINICAL WEEK AT MAYO FOUNDATION

A special program of lectures and demonstrations in surgery and medicine will be held under the direction of The Mayo Foundation from April 11 to 15, inclusive. Mornings will be devoted to surgical and medical clinics. In the afternoons and evenings presentations of various surgical subjects will be made and symposiums will be conducted on heart disease, arthritis, gynecology, gastro-enterology, oxygen therapy, pneumonia and bronchial asthma. Visiting physicians are invited to attend.

MASS ASSAULT CAN MOVE MOUNTAINS

"To abstain from medical activities under present menacing conditions is a wasteful squandering of that valuable asset of good teamwork at the very time when collaboration is absolutely vital. One does not change horses in the middle of the stream. When out in mid-ocean in a storm you do not see anybody shoving off in a rowboat by himself to save passenger money. Present conditions make mass action imperative and mass assaults can move mountains. Few, if any, can deny need for maintenance by the medical profession of the strongest possible organization—strong in numbers, militant in spirit and untiring in its concerted efforts to protect the interests of the medical profession and in so doing the interests of the community."—Charles J. Whalen.

"Are hard-boiled eggs beneficial to a girl just over twenty?" somebody asks a medical-advice column. Well, we should think much would depend on whether she was going to eat them or step out with them.—*Boston Herald.*

Preliminary Program

of the

Ninety-Ninth Annual Meeting

ILLINOIS STATE MEDICAL SOCIETY

Rockford, Illinois, May 2, 3, and 4, 1939

PROGRAM SUMMARY

Monday, May 1, 1939

1:00 P. M.—Registration, Hotel Faust.

Tuesday, May 2, 1939

9:00 A. M.—Registration, Hotel Faust.

10:00 A. M.—Pre-Convention Board Meeting.

11:00 A. M.—Round Table Discussions.

12:30 P. M.—Luncheon—Forest Hills Country Club. Mrs. William Raim presiding. Mrs. E. T. Leonard, local chairman. Speakers: Mrs. W. R. Fringer—Address of Welcome (others to be announced).

2:00 P. M.—General Meeting. Invocation—Rev. John Gordon. Welcome—Mayor Charles Brown. Response.

4:30 P. M.—Tea at Rockford College. Mrs. W. H. Wilmer and Mrs. E. H. Quandt, local chairmen.

7:00 P. M.—Dinner at Rockford Woman's Club. Mrs. C. A. Cibelius, dinner chairman. Mrs. W. J. Bryan, program chairman. Mrs. J. S. Lundholm, style show chairman.

Wednesday, May 3, 1939

9:30 A. M.—General Meeting. Memorial Services—Mrs. W. C. Bornemeier, chairman.

1:00 P. M.—President's Luncheon—Rockford Woman's Club. Mrs. William K. Ford, chairman. Speaker: Dr. Rock Sleyster, President-Elect American Medical Association.

3:00 P. M.—Post-Convention Board Meeting.

4:30 P. M.—Tea at Rockford Art Association. Mrs. Arthur Pearman, chairman.

7:00 P. M.—President's Dinner Dance and Bridge.

Programs of

SPECIAL ORGANIZATIONS

Woman's Auxiliary Program

All General Meetings and Social Activities are open to all doctors' wives.

SOCIAL FUNCTIONS FOR ALL LADIES

Tuesday, May 2, 1939

12:30 P. M.—Luncheon at Forest Hills Country Club.

4:30 P. M.—Tea at Rockford College.

7:00 P. M.—Dinner at Rockford Woman's Club. Program and Style Show.

Wednesday, May 3, 1939

1:00 P. M.—President's Luncheon—Rockford Woman's Club.

4:30 P. M.—Tea at Rockford Art Association.

7:00 P. M.—President's Dinner and Dance. Cards.

Secretaries' Conference

D. D. Monroe, *Chairman*.....Alton

A. R. Brandenberger, *Vice-Chairman*..Danville

A. R. Bogue, *Secretary*.....Rochelle

Tuesday Evening, May 2, 1939

Hotel Faust—Rainbow Room

6:00—Dinner.

1. "Cooperation of the County Secretaries With the Scientific Service Committee." Robert S. Berghoff, Chicago.

2. "Social Security Legislation and Its Relation to the Practice of Medicine." W. W. Bauer, Chicago.

3. "Syphilis Control in Illinois, Its Relation to the County Societies." I. H. Neece, Decatur.

Physicians' Association

DEPARTMENT OF PUBLIC WELFARE
STATE OF ILLINOIS

D. L. Steinberg.....*President*

J. W. Klapman.....*Secretary-Treasurer*

Tuesday Morning, May 2, 1939

9:00-12:00

"The Therapy of Post-Encephalitis, Especially the Oculo-Gyric Crisis." Harry I. Weiner, Dixon.

"Psychoses with Pernicious Anemia." George A. Wiltrakis, Elgin.

Symposium on Mental Disorders Following Head Trauma.

"Traumatic Psychoses." H. H. Goldstein, Chicago.

"Psychotic Reaction Following Trauma." D. Louis Steinberg, Elgin.

"Schizophrenic-Like Psychoses Following Head Injuries." Louis B. Shapiro, Elgin.

"Psychoses in Children." Eugene I. Falstein, Chicago.

Central States Society of Industrial Medicine and Surgery

Hotel Faust

William C. Goenne, *President*..Davenport, Iowa

John J. Grant, *Vice-President*.Freeport, Illinois

Frank P. Hammond, *Secretary-Treasurer*....
.....Chicago, Illinois

Roland A. Jacobson, *Program Chairman*....

.....Chicago, Illinois

Tuesday Morning, May 2, 1939

President William C. Goenne, Presiding

9:00—"Regional Anaesthesia in Traumatic Surgery." Emery B. Neff, Moline. Discussion opened by James J. Valentine, Chicago.

9:40—"Further Studies on the Application of Bone Plates." Will F. Lyon, Chicago. Discussion opened by James J. Callahan, Chicago.

10:20—"Functional Reflections of Organic Disease as Seen in Industry." Leroy H. Sloan, Chicago. Discussion opened by Roland P. MacKay, Chicago.

11:00—"Practical Tests of Functional Capacity in Silicotics." Elston L. Belknap, Milwaukee, Wisconsin. Discussion opened by James A. Britton, Chicago.

11:40—"Trauma in the Etiology of Peptic Ulcer." Chester C. Guy, Chicago. Discussion opened by George L. Apfelbach, Chicago.

Tuesday Afternoon, May 2, 1939

Joint Session with Section on Surgery.

2:30—"Treatment of Compound Fractures." Carlo S. Scuder, Chicago. Discussion opened by Ellsworth Black, Jacksonville.

"Fractures of the Elbow." Rudolph J. Mroz, Rockford. Discussion opened by Edwin M. Miller, Chicago.

"Pin Fixation of Fractures of the Neck of the Femur." Willis J. Potts, Oak Park. Discussion opened by James Stack, Chicago.

"Operative Treatment of Fractures." Paul B. Magnuson, Chicago.

Meetings of the House of Delegates*Tuesday Afternoon, May 2, 1939*

3:00—First meeting of the House of Delegates called to order by the President, Samuel E. Munson, for Reports of Officers, Councilors, Committees. Appointment of Reference Committees, Introduction of Resolutions, and for the transaction of other business which may come before the House.

Thursday Morning, May 4, 1939

9:00—Second meeting of the House of Delegates called to order by the President for the Election of Officers, Councilors, Committees, Delegates and Alternates to the American Medical Association, Reports of Reference Committees and action on same, Action on Resolutions,

and for the transaction of other business to come before the House.

General Sessions**OPENING MEETING***Tuesday Afternoon, May 2, 1939*

1:00—Meeting officially opened by the President.

Invocation.

Address of Welcome.

Report of Chairman, Committee on Arrangements.

1:30—Oration in Medicine. Speaker and subject to be announced.

Wednesday Morning, May 3, 1939

11:00—Oration in Surgery. Speaker and subject to be announced.

Wednesday Afternoon, May 3, 1939

1:30—President's Address. (Subject to be announced). S. E. Munson, President, Illinois State Medical Society, Springfield.

Thursday Morning, May 4, 1939

Induction of the President-Elect.

Immediately after the closing of the meeting of the House of Delegates, the President-Elect, James H. Hutton, Chicago, will be inducted into the office of President of the Illinois State Medical Society by the retiring President.

All members and guests at the meeting may be present at this interesting function.

Section on Programs**SECTION ON MEDICINE**

Robert KeetonChairman
E. M. Stevenson.....Secretary

Tuesday Afternoon, May 2, 1939

2:30—"Current Conceptions in Epilepsy." Meyer Brown, Chicago. Discussion opened by Warren G. Murray, Dixon.

3:00—"Differential Diagnosis of Low Back Pain." Samuel J. Lang, Evanston. Discussion opened by James Stark, Chicago.

(Lantern slides and movie films)

3:30—"The Role of Cevitamic Acid in Various Clinical Conditions." M. A. Spellberg, Chicago.

4:00—"Diagnostic Data in Intestinal Tuberculosis." Leo L. Hardt, Chicago.

4:30—"Gastro-Intestinal Symptoms of Upper Respiratory Infections." John F. Carey, Joliet.

Wednesday Morning, May 3, 1939

Joint Session with Sections on Surgery and Radiology.

"Etiology and Differential Diagnosis of Gastro-Intestinal Hemorrhage." M. M. Montgomery, Chicago.

"Treatment of Hemorrhage from the Gastro-Intestinal Tract." Alexander Brunschwig, Chicago.

"Intractable Ulcers." C. H. Drenckhahn, Urbana.

"Perforation of the Gastro-Intestinal Tract." Gatewood, Chicago.

"The Use of X-rays in Perforation and Hemorrhage of the Gastro-Intestinal Tract." Earl R. Crowder, Evanston.

Wednesday Afternoon, May 3, 1939

2:30—Chairman's Address.

"The Advantages of the Physiological View Point in Medicine." Robert Keeton, Chicago.

SYMPOSIUM ON PNEUMONIA

2:50—"Diagnosis in the Acute Pneumonias." Courtney Hamlin, Rockford.

3:10—"General Management of Pneumonia." M. Herbert Barker, Chicago.

3:30—"Serum and Drug Therapy in Pneumonia." I. F. Volini, Chicago.

3:50—"The Roentgen Ray in the Management of Pneumonia." (Lantern Demonstration). Edwin L. Rypins, Bloomington.

4:10—"Pneumonia in Childhood." Walter M. Whitaker, Quincy.

4:30—General Discussion following Symposium.

Thursday Morning, May 4, 1939

Joint Session with Sections on Surgery; Eye, Ear, Nose and Throat; Public Health and Hygiene, Radiology; Pediatrics; and Obstetrics and Gynecology.

PROBLEMS IN ENDOCRINOLOGY

9:00—"The Endocrines and the General Practitioner." George B. Lake, Waukegan.

9:20—"Influence of Hormones on Growth and Development." Isaac A. Abt., Chicago.

9:40—"Endocrinology in Ophthalmology." Elias Selinger, Chicago.

10:00—"Diagnostic Roentgenological Aspects of Endocrine Diseases." Cesare Gianturco, Urbana.

10:20—"Surgical Treatment of Essential Hypertension." Loyal Davis, Chicago.

10:40—"The Use of Progestin in Obstetrical Complications." Fredrick H. Falls, Chicago.

11:00—"X-ray Therapy as Applied to the more common forms of Disturbance of the Endocrine Glands." F. Flinn, Decatur.

11:20—General Discussion.

Section on Surgery

Darwin KirbyChairman
Frederick ChristopherSecretary

Tuesday Afternoon, May 2, 1939

SYMPOSIUM ON FRACTURES

2:30—"Treatment of Compound Fractures." Carlo S. Scuderi, Chicago. Discussion opened by Ellsworth Black, Jacksonville.

"Fractures of the Elbow." Rudolph J. Mroz, Rockford. Discussion opened by Edwin M. Miller, Chicago.

"Pin Fixation of Fractures of the Neck of the Femur." Willis J. Potts, Oak Park. Discussion opened by James Stack, Chicago.

"Operative Treatment of Fractures." Paul B. Magnuson, Chicago. (Auspices of Central States Society of Industrial Medicine and Surgery).

Wednesday Morning, May 3, 1939

Joint Session with Sections on Medicine and Radiology.

"Etiology and Differential Diagnosis of Gastro-Intestinal Hemorrhage." M. M. Montgomery, Chicago.

"Treatment of Hemorrhage from the Gastro-Intestinal Tract." Alexander Brunschwig, Chicago.

"Intractable Ulcers." C. H. Drenckhahn, Urbana.

"Perforation of the Gastro-Intestinal Tract." Gatewood, Chicago.

"The Use of X-rays in Perforation and Hemorrhage of the Gastro-Intestinal Tract." Earl R. Crowder, Evanston.

Wednesday Afternoon, May 3, 1939

"Treatment of Acute and Chronic Osteomyelitis." Paul H. Harmon, Springfield. Discussion opened by Howard Hatcher, Chicago.

"Burns." Charles L. Patton, Springfield. Discussion opened by E. D. Wise, Champaign.

"Peritonitis." Karl Meyer, Chicago. Discussion opened by Marshall Davison, Chicago.

"Surgery of the Common Bile Duct." Warren Cole, Chicago. Discussion opened by J. R. Buchbinder, Chicago.

Thursday Morning, May 4, 1939

Joint Session with Sections on Medicine; Eye, Ear, Nose and Throat; Public Health and Hygiene, Radiology; Pediatrics; and Obstetrics and Gynecology.

PROBLEMS IN ENDOCRINOLOGY

(For Program and Complete Abstracts of Papers, See Section on Medicine.)

Section on Eye, Ear, Nose and Throat

S. J. MeyerChairman
Frank W. BrodrickSecretary

Tuesday Morning, May 2, 1939

"Suggestive Treatment of the Maxillary Sinus Subsequent to Dental Surgery." J. Sheldon Clark, Freeport.

"The Contact Glass Problem." Wm. H. Droege Mueller, Chicago. Discussion opened by Theodore N. Zekman, Chicago.

"Acute Suppurative Otitis Media and Mastoiditis." M. A. Glatt, Chicago. Discussion opened by Geo. T. Jordan, Chicago; Geo. J. Musgrave, Chicago.

"Clinical Roentgenographic Aspects of Petrositis." S. M. Morwitz, Chicago. Discussion opened by Gerhard Danelius, Chicago.

"An Efficient Adjunct in the Treatment of Corneal Ulcers." Watson W. Gailey, Bloomington.

Tuesday Afternoon, May 2, 1939

INSTRUCTION COURSES

"Anatomy and Pathology of the Middle Ear Tract." J. J. Potter, Rockford.

"Acute Laryngeal Obstruction, Its Causes,

Pathology and Treatment." Thomas C. Galloway and Eustace L. Benjamin, Evanston.

"Gonioscopy." Thomas D. Allen, Chicago.

"Concomitant Strabismus." George Guibor, Ottawa.

Tuesday Evening, May 2, 1939

Annual Banquet of the Section.

Wednesday Morning, May 3, 1939

"Laryngeal Carcinoma." L. B. Bernheimer, Chicago. Discussion opened by Max Cutler, Chicago.

"Glaucoma vs. Cataract." Louis Bothman, Chicago. Discussion opened by Harry W. Woodruff, Joliet.

"Closure of Post-Auricular Fistula, following Radical Mastoidectomy." Harold V. Wadsworth and Geo. H. Woodruff, Joliet.

"Pathology and Treatment of Otitic and Rhinogenic Meningitis." Hans Brunner, Chicago. (Guest Speaker.)

Wednesday Afternoon, May 3, 1939

Chairman's Address.

"Progress in Ophthalmology." Samuel J. Meyer, Chicago.

"The Upper Respiratory Revenge of the Allergic Child." I. Harrison Tumpeer, Chicago. Discussion opened by Thos. C. Galloway, Evanston.

"The Eyeground in Hypertensive and Renal Disease." Bertha Klien, Chicago.

"Plastic and Reconstructive Surgery Then and Now."

"Then."—Jos. C. Beck, Chicago.

"Now."—M. Reese Guttman, Chicago.

Thursday Morning, May 4, 1939

Joint Session with Sections on Medicine; Surgery; Public Health and Hygiene; Radiology; Pediatrics; Obstetrics and Gynecology.

PROBLEMS IN ENDOCRINOLOGY

(For Program and Complete Abstracts of Papers, See Section on Medicine.)

Section on Public Health and Hygiene

F. S. NeedhamChairman
L. E. OrrSecretary

Tuesday Afternoon, May 2, 1939

"Rocky Mountain Spotted Fever in Illinois." Winston H. Tucker, Evanston.

"The Pneumonia Control Program of Illinois." H. A. Lindberg, Chicago.

"Undulant Fever: Its Sources, Modes of Infection and Prophylaxis." J. F. Shrouts, Woodstock.

A review of the recent literature summarizing the epidemiology of undulant fever discloses considerable disagreement among writers on the relative importance of raw milk as a source of Brucellosis.

Practical control measures for the eradication of the disease are discussed in the light of recent epidemiological and statistical studies with reference to the usual mode of infection as seen in the increasingly larger annual number of cases reported in Illinois.

"Rabies Control in Illinois." C. A. Z. Sharp, Springfield.

"Audiometer Tests on 10,000 Children." G. Koehler, Springfield.

Wednesday Afternoon, May 3, 1939

"Measles in 1938." Archibald Hoyne, Chicago. (Joint paper with Section on Pediatrics).

"Endocrine Disorders from a Public Health Aspect." James H. Hutton, Chicago.

"The Dissemination and Control of Bacillary Dysentery." Louis H. Block, Chicago.

"Tularemia." P. A. Steele, Decatur.

"Immunizations." R. C. Farrier, East St. Louis.

Thursday Morning, May 4, 1939

Joint Session with Sections on Medicine: Surgery; Eye, Ear, Nose and Throat; Radiology: Pediatrics; and Obstetrics and Gynecology.

PROBLEMS IN ENDOCRINOLOGY

(For Program and Complete Abstracts of Papers, See Section on Medicine).

Section on Radiology

Harry B. MageeChairman
Warren W. Furey.....Secretary

Tuesday Afternoon, May 2, 1939

"Tuberculosis in Children." E. T. McEnery, Chicago.

A discussion of childhood tuberculosis, emphasizing the importance of contact with positive cases of tuberculosis present in the home, outside the immediate

family, such as grand-parents, maids, teachers, handy men, etc. The necessity of protecting such contacts by careful check-up with these people, with special reference to the x-ray findings, demonstrations and slides.

"Excretion Urography." R. A. Arens, Chicago.

"Roentgen Consideration of Lesions in and About the Larynx."

Diagnosis—Adolph Hartung, Chicago.

Therapy—T. J. Wachowski, Chicago.

The roentgen examination may disclose pathology or show its exact localization and extent when other methods may not be applicable. The findings revealed by it require close co-operation with the laryngologist for proper interpretation. Technical procedures, are described at length.

The status of surgery vs. radiation is briefly presented. Various methods of radiation therapy are mentioned. The Coutard theory of roentgen therapy is explained, with indications, contra-indications, and reasons for success or failure. Statistics from published large series are given.

Discussion opened by Paul H. Hollinger, Chicago.

Case Reports.

"Peanut in Bronchus." G. M. Landau, Chicago.

Other cases to be announced, if you have an unusual or interesting case for interpretation address the Secretary.

Wednesday Morning, May 3, 1939

Joint Session with Sections on Medicine and Surgery.

"Etiology and Differential Diagnosis of Gastro-Intestinal Hemorrhage." M. M. Montgomery, Chicago.

"Treatment of Hemorrhage from the Gastro-Intestinal Tract." Alexander Brunschwig, Chicago.

"Intractable Ulcers." C. H. Drenckhahn, Urbana.

"Perforation of the Gastro-Intestinal Tract." Gatewood, Chicago.

"The Use of X-rays in Perforation and Hemorrhage of the Gastro-Intestinal Tract." Earl R. Crowder, Evanston.

Thursday Morning, May 4, 1939

Joint Session with Sections on Medicine; Surgery; Eye, Ear, Nose and Throat; Public Health and Hygiene; Pediatrics and Obstetrics and Gynecology.

PROBLEMS IN ENDOCRINOLOGY

(For Program and Complete Abstracts of Papers, See Section on Medicine.)

Section on Pediatrics

Gerald Cline *Chairman*
Orville Barbour *Secretary*

Tuesday Afternoon, May 2, 1939

Joint Session with Section Obstetrics and Gynecology.

1:30-3:00

"Some Observations on Cerebral Hemorrhage In the New-Born." Heyworth H. Sanford, Chicago.

"Study of Maternal and Infant Mortality in Chicago." Charles Newberger, Chicago.

"The Interdependence of A Public Health Program To the Practice of Obstetrics and Pediatrics." Elizabeth B. Ball, Springfield.

Wednesday Morning, May 3, 1939

Panel Discussion on Rheumatic Fever in Childhood.

Leader.....Stanley Gibson, Chicago.

Assistants.....H. William Elghammer,
Chicago; King G. Woodward, Rockford;
George L. Drennan, Jacksonville.

Thursday Morning, May 4, 1939

Joint Session with Sections on Medicine; Surgery; Eye, Ear, Nose and Throat; Public Health and Hygiene; Radiology; and Obstetrics and Gynecology.

PROBLEMS IN ENDOCRINOLOGY

(For Program and Complete Abstracts of Papers, See Section on Medicine).

Section on Obstetrics and Gynecology

W. T. Carlisle *Chairman*
W. A. Malcolm *Secretary*

Tuesday Afternoon, May 2, 1939

Joint Session with Section on Pediatrics.

1:30-3:00

"Some Observations on Cerebral Hemorrhage In The New-Born." Heyworth N. Sanford, Chicago.

"Study of Maternal and Infant Mortality in Chicago." Charles Newberger, Chicago.

"The Interdependence of a A Public Health Program To the Practice of Obstetrics and Pediatrics." Elizabeth B. Ball, Springfield.

Wednesday Afternoon, May 3, 1939

2:30-5:00

"Latent Gonorrhea in Obstetrical Patients." E. D. Plass, Professor of Obstetrics and Gynecology, University of Iowa. (By invitation). Discussion opened by W. H. Browne, and Joseph L. Baer, Chicago.

"Kraurosis and Leukoplakia of the Vulva." John I. Brewer, Chicago.

"Anesthesia and Analgesia." F. Nash.

"Fibroids." A. E. Kanter, Chicago.

Discussion opened by James Carey, Joliet.

"Anesthesia and Analgesia in Obstetrics." Edwin N. Nash, Galesburg.

Thursday Morning, May 4, 1939

Joint Session with Sections on Medicine; Surgery; Eye, Ear, Nose and Throat; Public Health and Hygiene; Radiology; and Pediatrics.

PROBLEMS IN ENDOCRINOLOGY

(For Program and Complete Abstracts of Papers, See Section on Medicine.)

TECHNICAL EXHIBITORS AT THE 1939 ANNUAL MEETING

* * *

A. S. Aloe Company, Saint Louis, Mo.
The Arlington Chemical Company, Yonkers, N. Y.
The Borden Company, New York, N. Y.
Chappel Bros., Inc., Rockford, Ill.
Ciba Pharmaceutical Products, Inc., Summit, N. J.
The DeVilbiss Company, Toledo, Ohio.
Eli Lilly and Company, Indianapolis, Ind.
C. B. Fleet Company, Inc., Lynchburg, Va.
H. G. Fischer & Company, Chicago, Ill.
General Electric X-Ray Corporation, Chicago, Ill.
Gerber Products Company, Fremont, Mich.
Hynson, Westcott & Dunning, Inc., Baltimore, Md.
Horlick's Malted Milk Corporation, Racine, Wis.
Jetter & Scheerer Products, Inc., New York, N. Y.
Jones Metabolism Equipment Company, Chicago, Ill.
Lederle Laboratories, Inc., New York, N. Y.
J. B. Lippincott Company, Philadelphia, Pa.
A. E. Mallard, Detroit, Mich.
Mead Johnson & Company, Evansville, Ind.
Medical Protective Company, Wheaton, Ill.
Mellin's Food Company, Boston, Mass.
The Mennen Company, Newark, N. J.

M. & R. Dietetic Laboratories, Inc., Columbus, Ohio.
 V. Mueller & Company, Chicago, Ill.
 Pet Milk Sales Corporation, St. Louis, Mo.
 Petrolagar Laboratories, Inc., Chicago, Ill.
 Philip Morris & Co., Ltd., Inc., New York, N. Y.
 W. B. Saunders Company, Philadelphia, Pa.
 S. M. A. Corporation, Chicago, Ill.
 Smith, Kline & French Laboratories, Philadelphia, Pa.
 E. R. Squibb & Sons, New York, N. Y.
 Standard X-Ray Company, Chicago, Ill.
 White Laboratories, Inc., Newark, N. J.
 John Wyeth & Brother, Inc., Philadelphia, Pa.
 Zuck and Eaton, Rockford, Ill.

A. S. ALOE COMPANY—Booth 14

"A. S. Aloe Company of St. Louis, the world's largest surgical supply house," this year is showing several pieces of their STEENLINE Treatment Room Equipment, which features the rugged durability of heavy gauge construction combined with the modern, plastic beauty of fine wood furniture. In addition their complete line of Boston bags, medicine cases, and special instruments will be shown. Particularly featured is a full line of American made STAINLESS STEEL Instruments. The Aloe Company will be represented by Val H. Drennan, their western Illinois representative.

THE ARLINGTON CHEMICAL COMPANY—BOOTH 6

Again the Arlington Chemical Company will exhibit their products and the Illinois State Medical Society Convention, featuring their Biological and Pharmaceutical Products. They are offering a \$9.75 diagnostic protein outfit consisting of eighty of the most common causative factors in alleletic conditions. Also a full line of Food, Epidermal, and Fungi proteins and Pollen extracts for diagnosis and desensitization. Dr. J. H. Frazer, who will be in charge of the exhibit, will be glad to discuss any allergic problem.

THE BORDEN COMPANY—Booth 12

New, yet already remarkably successful in infant feeding, BIOLAC is exhibited for the first time in Illinois at the Borden Booth. Competent representatives will gladly provide specific, helpful information on the unique virtues of this liquid, modified milk.



Also exhibited are other Borden products, notably DRYCO, KLIM, BETA LACTOSE, Merrell-Soule Products and Borden's Irradiated Evaporated Milks.

CHAPPEL BROTHERS, INC.—Booth 7

Chappel Laboratories feature their contribution to "Endocrine Therapy in General Practice," Prephysin-Chappel. Prephysin-Chappel is a true anterior pituitary gonadotropic preparation, derived from the anterior lobe of the pituitary gland.

Also featured will be Chappel E. M. F., which is a highly concentrated Erythrocyte Maturing Factor of liver and 500 International Units of crystalline Vitamin B₁ per cc.

Potent, highly refined, clinically tested, Chappel Pharmaceuticals have set a new high standard for pernicious and secondary anemia preparations.

CIBA PHARMACEUTICAL PRODUCTS, INC.—Booth 5

Among the products CIBA Pharmaceutical Products, Inc., will exhibit at their booth are Perandren "Ciba" (Testosterone Propionate) synthetically prepared chemically pure male hormone. Trasentin "Ciba," a synthetically and chemically pure non-narcotic antispasmodic, having the advantageous pharmacologic properties of both Papaverine and Atropine without their undesirable side effects. Esidrone "Ciba," a potent mercurial diuretic in which the mercury is chemically combined with Theophylline. Representatives of CIBA Pharmaceutical Products, Inc., will be at the booth and will be very happy to welcome their physician friends.

THE DE VILBISS COMPANY—Booth 26

The complete DeVilbiss line of atomizers, steam vaporizers and nebulizers will be on display. Especially featured in the exhibit are illustrations graphically showing the superior coverage afforded by the atomizer in the application of solutions to the nose and throat. These illustrations are based on X-Ray research.

Copies of the illustrations for reference may be secured from Mr. E. J. Corfeld, DeVilbiss representative in charge of the display.

ELI LILLY AND COMPANY—Booth 25

We plan to feature the following Council-accepted products: Liver Extracts, Lilly, "Amytal" (Iso-amyl Ethyl Barbituric Acid, Lilly), "Methiolate" (Sodium Ethyl Mercuri Thiosalicylate, Lilly), Iletin (Insulin, Lilly), and ephedrine products.

C. B. FLEET COMPANY, INC.—Booth 15

Phospho-Soda (Fleet) is a highly concentrated and purified, aqueous solution of sodium phosphates. It is nontoxic, rapid but mild in action without irritation of the gastric or intestinal mucosa. Indicated for hepatic dysfunction, and for its thorough eliminating and cleansing action on the upper and lower gut.

H. G. FISCHER & COMPANY—Booth 24

The latest Fischer Model of Short Wave, X-Ray and other apparatus, to be exhibited and demonstrated will interest physicians because of the many unique features of design and performance. The complete FISCHER line includes Shockproof X-Ray apparatus, short wave units, combination cabinets, galvanic generators, ultra violet and infra-red lamps; tissue-cutting and other units, accessories and supplies. Physicians attending the convention are invited to ask for demonstrations of models in which they are interested or to consult with FISCHER representative regarding techniques made available by FISCHER apparatus.

GENERAL ELECTRIC X-RAY CORPORATION—
Booths 1 and 2

GERBER PRODUCTS COMPANY—Booth 21

The new Gerber Cereal Food, Dry Pre-Cooked, will be shown at the Gerber booth. Samples and professional literature about this Cereal product, as well as the other Gerber Baby Foods, are available.

HORLICK'S MALTED MILK CORPORATION—
Booth 18

A treat for the well, a boon for the sick and convalescent! Horlick's the Original Malted Milk combines the unique advantages of a refreshing beverage with those of a nutritious food of remarkable digestibility. You will enjoy a call at the Horlick Booth where samples of Horlick's Malted Milk Tablets, the delicious food confection will be distributed.

HYNSON, WESTCOTT & DUNNING, INC.—
Booth E

Hynson, Westcott & Dunning, Inc., will have an exhibit featuring Mercurochrome and various pharmaceutical specialties of their manufacture. There will also be a display of some of the diagnostic apparatus and ampule solutions which have been developed in cooperation with physicians. As usual, competent representatives of the company will be in attendance to demonstrate the products and to answer questions. Literature and samples will be available to physicians who are not already familiar with products exhibited or who wish to obtain a trial supply.

JETTER & SCHEERER PRODUCTS, INC.—
Booth B

Jetter & Scheerer Products, Inc., will exhibit a very extensive line of Rustless Steel and chrome plated instruments, including specialties such as our Von Petz and Neuffer-Ulrich Stomach and Intestinal Suturing Apparatus.

JONES METABOLISM EQUIPMENT COMPANY
—Booth 20

The Jones Metabolism Equipment Company in Booth 20 will feature as their display the Jones Motor Basal metabolism apparatus.

A special feature of this unit is that it contains no water and requires no calculation in determination of the basal metabolic rate.

LEDERLE LABORATORIES, INC.—Booth 11

J. B. LIPPINCOTT COMPANY—Booth 23

J. B. Lippincott Company will exhibit Thorek: "Modern Surgical Technic"; Rigler "Outline of Roentgen Diagnosis"; Bacon: "Anus, Rectum, Sigmoid Colon"; Wilson: "Management of Fractures and Dislocations"; Maxon: "Spinal Anesthesia"; Spicer: "Trauma and Internal Disease," and their full line of medical and surgical publications.

A. E. MALLARD—Booth 1

MEAD JOHNSON & COMPANY—Booth 3

Three new Mead products are on display at Mead Johnson & Company's booth: Mead's Thiamin Chloride Tablets; Mead's Cevitamic Acid Tablets; Mead's Mico-tinic Acid Tablets. Olac for feeding prematures is also shown, as well as the complete line of Mead's infant diet materials.

THE MEDICAL PROTECTIVE COMPANY—
Booth 27

The most exacting requirements of adequate liability protection are those of the professional liability field. The Medical Protective Company, specialists in providing protection for professional men, invites you to confer, at their exhibit, with the representative there. He is thoroughly trained in Professional Liability underwriting.

MELLIN'S FOOD COMPANY—Booth 28

Opportunity will be offered for a discussion of the application of Mellin's Food in the feeding of infants whose individual condition sets them apart from so-called normal babies, and whose diet needs to be adjusted in a manner calculated to correct their digestive disturbance. Mellin's Food is worthy of attention for it has occupied an outstanding position in the field of pediatrics ever since the beginning of the study of the art or science of infant feeding.

THE MENNEN COMPANY—Booth 4

The Mennen Company will exhibit their two baby products—Antiseptic Oil and Antiseptic Borated Powder. The Antiseptic Oil is now being used routinely by more than 90 per cent of the hospitals that are important in maternity work. Be sure to register at the Mennen exhibit and receive your kit containing demonstration sizes of their shaving and after-shave products; Also, for the lucky number prize drawing to be held at the close of the Convention for DeLuxe Fitted Leather Toilet Kits.

M. & R. DIETETIC LABORATORIES, INC.—
Booth 16

M. & R. Dietetic Laboratories, Inc., Columbus, Ohio, will display Similac and powdered SofKurd. Representatives will be glad to discuss the merits and suggested application of these products.

V. MUELLER & COMPANY—Booth 29

V. Mueller & Company extends a cordial invitation to members and guests to visit their booth where in addition to an extensive display of standard surgical instruments in both stainless steel and chromium plate, they will show many recent developments. The new Mueller bone surgery engine with a complete line of accessories will be demonstrated. The Zachary Cope modification of the DeMartel Clamp as well as the DeBakey and Devine Colostomy Spur Crushers will

be exhibited. A stop at Mueller's booth is always interesting and instructive.

PET MILK SALES CORPORATION—Booth A

An actual working model of a milk condensing plant in miniature will be exhibited by the Pet Mik Company in Booth A. This exhibit offers an opportunity to obtain information about the production of Irradiated Pet Milk and its uses in infant feeding and general dietary practice. Miniature Pet Milk cans will be given to each physician who visits the Pet Milk Booth.

PETROLAGAR LABORATORIES, INC.—Booth 8

This year Petrolagar Laboratories, Inc., will offer in addition to samples of the Five Types of Petrolagar, an interesting selection of descriptive literature and anatomical charts. Ask the Petrolagar representative, Mr. R. P. English, to show you the new HABIT TIME booklet. It's a welcome aid for teaching bowel regularity to your patients.

PHILIP MORRIS & CO., LTD., INC.—Booth 22

Philip Morris & Company will demonstrate the method by which it was found that Philip Morris Cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes. Their representative will be happy to discuss researches on this subject, and problems on the physiological effects of smoking.

W. B. SAUNDERS COMPANY—Booth 30

W. B. Saunders Company, Philadelphia and London, will exhibit a complete line of their books. Of particular interest to the profession are many new books and new editions, including the new (second) edition of Callander's "Surgical Anatomy," the new (11th) edition of Scudder's "Fractures," Cutler's new book on "Cancer," Morrisons new work on "Nose, Throat and Ear," Becks new "Hematologic Technic," the new (6th) edition of Norris & Landis' "Chest Diagnosis," the new (4th) edition of Boyd's "Surgical Pathology," Re-edition of Norris & Landis' "Chest Diagnosis," the new Surgery," the new (7th) edition of DeLee's "Obstetrics," the new (18th) edition of the "American Illustrated Medical Dictionary," the new "Mayo Clinic Volume," Murphy's new book on "Pernicious Anemia," the new (2nd) edition of Wolf's "Endocrinology," the new (2nd) edition of Pelouze's book on "Gonorrhea," Mallory's "Pathological Technique," Crile's "Surgical Treatment of Hypertension," the new (2nd) edition of Andrews' "Diseases of the Skin," the new (3rd) edition of Beckman's "Treatment," the new (3rd) edition of Curtis' "Gynecology," and of course such standard works as Bickham's "Operative Surgery," Warbasse-Smyth's "Surgical Treatment," Cecil's "Medicine," Herman's "Urology," Christopher's "Textbook of Surgery" and his "Minor Surgery."

S. M. A. CORPORATION—Booth 9

Among the technical exhibits at the convention this year is an interesting new display which represents

the selection of infant feeding and vitamin products of the S. M. A. Corporation. Physicians who visit this booth may obtain complete information as well as samples of S. M. A. Powder and the special milk preparations—Protein S. M. A. (Acidulated), Alerdex and Hypo-Allergic Milk.

SMITH, KLINE, FRENCH LABORATORIES—Booth C

Smith, Kline & French Laboratories, believing that many physicians dislike efforts to make them register, have arranged their exhibit for self-service.

Information about "Benzedrine Inhaler," "Benzedrine Sulfate Tablets," "Benzedrine Solution," Feosol Tablets and Feosol Elixir, Oxo-ate "B" Tablets, Pentnucleotide, and Eskay's Neuro Phosphates may be obtained from the convenient literature dispenser. If additional information is desired, the representative will be glad to answer any questions.

E. R. SQUIBB & SONS—Booth 19

Physicians attending the Illinois State Medical Society meeting are cordially invited to visit the Squibb Exhibit. The complete line of Squibb Vitamin, Glandular, Arsenical and Biological Products and Specialties, as well as a number of interesting new items, will be featured.

Well informed Squibb Representatives will be on hand to welcome you and to furnish any information desired on the products displayed.

STANDARD X-RAY COMPANY—Booth 17

The Standard X-Ray Company of Chicago invites you to visit their booth and see the Model "EBRF" 100 Shockproof Diagnostic X-Ray unit. This unit may be installed in a room as small as 8 by 10 feet. It is ideal for office use and has a tilting radiographic and fluoroscopic table with built-in counterbalanced Bucky Diaphragm, a counter-balanced rail mounted tube stand. The generator is available in 60 and 100 milli-ampere models and is of sufficient capacity for superficial therapy. The PRICE—surprisingly low.

WHITE LABORATORIES, INC.—Booth 13

White Cod Liver Oil Concentrate will offer for your consideration, information covering the entire field of cod liver oil concentration, together with clinical data and evidence concerning the efficacy of its Liquid, Tablet and Capsule concentrates, as well as of cod liver oil, per se.

Informed representatives, and descriptive literature, reprints and excerpts will further demonstrate cod liver Oil efficiency, and will point out White Laboratories, Inc., contributions in the vitamin A and D field.

White Laboratories, Inc., is the world's largest manufacturer of cod liver oil concentrates, and is one of the largest users of cod liver oil for pharmaceutical purposes in the world.

All physicians are cordially invited to visit the booth.

JOHN WYETH & BROTHER, INC.—Booth 10.

John Wyeth & Brother, Incorporated, will display a number of their pharmaceutical specialties including: Kaomagma intestinal absorbant; Amphojel, Wyeth's Alumina gel, antacid; Silver Picrate, "accepted" for use in the treatment of Trichomonas vaginitis; Bewon Elixir, a palatable dosage form of crystalline Vitamin B₁, and other newer preparations of interest to both general practitioners and specialists.

ZUCK AND EATON—Booth D

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NINETY-NINTH ANNUAL MEETING

ROCKFORD, ILLINIOS

May 2, 3, 4, 1939

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NINETY-NINTH ANNUAL MEETING

ROCKFORD, ILLINOIS

May 2, 3, 4, 1939

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 Mrs. Homer F. Moore

Wednesday, May 3, 1939

PRESIDENT'S LUNCHEON at Rockford Woman's Club.

MRS. WILLIAM K. FORD.....Chairman

Mrs. Bruce Canfield Mrs. J. T. Rankin

Mrs. J. L. Probasco Mrs. C. L. Leppert

TEA at Rockford Art Gallery.

MRS. ARTHUR PEARMAN.....Chairman

Mrs. L. A. Shultz Mrs. John A. Green

Mrs. W. R. Franklin

SULFANILAMIDE TREATMENT OF TRACHOMA: PRELIMINARY REPORT

In August, 1937, Fred Loe, Rosebud, S. D. (*Journal A. M. A.*, Oct. 8, 1938), began to use sulfanilamide in the treatment of trachoma. For the experiment two patients were selected whose condition had been diagnosed as trachoma by an eye specialist in the Indian Service and by several other physicians in the Indian Service who are especially experienced with trachoma. On the basis of their body weight they were given one-third grain (0.02 Gm.) of sulfanilamide per pound of weight with an equal amount of sodium bicarbonate for ten days. Then the dose was decreased to one-fourth grain (0.016 Gm.) of sulfanilamide a pound daily for fourteen days. No other medication was allowed during this period. Within five days after treatment was begun changes in the conjunctiva were observed; the redness gradually disappeared, the granules and papules decreased in size and the blood vessels became increasingly visible. With a maintenance dose of one-fourth grain of sulfanilamide a pound daily, these two patients were apparently cured of trachoma within one month. To date neither has shown signs of recurrence. On Jan. 6, 1938, sulfanilamide treatment was begun in thirteen patients who had been under continuous treatment for trachoma for from one to seven years. Three were dismissed on January 16, apparently cured; the remaining ten were found to be greatly improved after being under treatment for eight days and were treated for two weeks longer. Sulfanilamide in the treatment of trachoma has so far been used in 140 patients, all either hospitalized or under the close supervision of nurses. The reactions have been surprisingly few and mild. In three cases, dermatitis developed. Three days after withdrawal of the sulfanilamide this cleared up, leaving no sequelae. Four patients complained of mild vertigo and headache. Withdrawal of the sulfanilamide for twenty-four hours cleared these symptoms, and the patients were able to resume treatment.

RECENT RESEARCHES IN NUTRITION IN RELATION TO PREVENTITIVE MEDICINE

Nina Simmonds, San Francisco (*Journal A. M. A.*, Sept. 17, 1938), concludes her discussion of nutrition in relation to preventative medicine by saying that the practical application of research in nutrition during

the past twenty-five years has been not only to emphasize the value of sunshine and fresh air but also to give the reasons why in a system of diet the following familiar foods have unusual dietary significance: meats, including glandular organs, poultry and fish; eggs; milk in its many forms and products; fruits and vegetables (fresh, canned and frozen); legumes, and cereals and their products, especially whole grain products. Research has provided vitamin capsules, vitamin tablets, brewers' yeast tablets and numerous other vitamin preparations, many of which are excellent supplements to a diet when certain foods are disliked, but one should know what they do not contain as well as what they do contain. Nutrition has been referred to as "an economic, agricultural, industrial and commercial problem, as well as a problem in physiology." However, because of the results of recent researches on diet and its relation to disease conditions, from the standpoint of preventive medicine and of public health, nutrition may now be considered largely a problem of economics and education.

AN AGE OF PANACEAS

The *Chicago Tribune*, Voice of the People, September 21, 1938, appears the following:

Chicago, Sept. 16.—Hurrah and again hurrah! We have it at last! That \$30 every Thursday (why not Monday) for deserving Californians turns out to be nothing more or less than the old prosperity certificate plan.

Talk about economic perpetual motion! Verily we live in an age of panaceas. Any scheme that means more idleness or a chance to get something for nothing guarantees a fast and free ride into office.

O, for a public official or a candidate honest enough and possessing the courage to tell the truth! That work and not idleness produces wealth; that saving and not reckless spending conserves it, and, lastly, that each individual of sane mind and sound body is responsible for his own salvation and security. That was how America was built. The co-called "advanced" social theories that teach idleness, dependence on the state, and security without effort or sacrifice are popular, but they will destroy us as a nation and as individuals if they are permitted to persist.—*Horse and Buggy Economist*.

SHE GOT IT IN THE TWILIGHT

A young unmarried woman consulted a physician for a vaginal discharge. The physician made a vaginal smear and when the laboratory report was completed he called the patient into his private office and told her frankly that she was suffering from gonorrhea. The patient flushed a little, looked very puzzled and said, "I cannot figure out how I got it unless I got it in the twilight."

The physician did not argue with her about this point. He took for granted that she ought to know best how, when and where she contracted the disease.

ANONYMOUS.

Original Articles

APPLICATION OF NEW KNOWLEDGE OF NERVE PHYSIOLOGY TO CLINICAL MEDICINE

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SPRINGFIELD

Physiologists have conclusively shown that efferent nerve impulses are transmitted by known chemical substances. Much work is being done in effort to utilize this knowledge in clinical medicine. It is now possible to isolate from the multitude of "nerve" patients many individuals who have functional disturbances due to excessive chemical activity associated with hyperfunction of a part of the nervous system. During the past year I have had the opportunity to study such patients at the National Hospital, Queen Square, London, and in private practice. In the light of new physiologic principles it has been possible to visualize more clearly the mechanisms underlying many common symptoms and institute rational and effective therapeutic measures.

In 1935 the Nobel prize in Science was granted jointly to Sir Henry Dale, of London, and Professor Otto Loewi, of Graz, in recognition of the importance of their independent work which converged over a period of years to the point of proof that efferent nerves act in a secretory manner causing, upon the arrival of an impulse volley, the release at their endings of chemicals which they identified ^{1, 2, 3}. They found on stimulation of the vagus and other parasympathetic nerves that acetyl-choline, a derivative of the phospholipids, is released. This is a very unstable compound, its action is explosive in character and it is immediately broken down by an enzyme, choline esterase. In continuous stimulation impulse volleys pass down the nerve at a rate of from five to 100 per second. The chemical reaction at the nerve ending is intermittent, although the resulting action appears continuous. The sweat glands and arterioles in the skin are known to be innervated only by nerves which belong anatomically to the sympathetic system, yet sweating and vasodilation have been found to depend on acetyl-choline as the effective chemical. The opposing system of autonomic nerves, that is, most of the postgan-

glionic sympathetic fibers were found to cause the liberation of a substance chemically closely allied with, if not identical to, the well known hormone adrenalin. Cannon⁴ states that the preganglionic sympathetic fibers which directly supply the adrenal medulla act through the medium of acetyl-choline. This organ is unique in that no postganglionic fibers intervene between the innervating neuron which originates in the spinal cord. It is similar to a large sympathetic ganglion which contains the same type of chromaffin cells. Sympathetic ganglion cells have also been found to receive their activating impulse from acetyl-choline which is liberated by the preganglionic fibers.

The recent work of Dale et al⁵ strongly suggests that acetyl-choline is liberated at the motor end plate of voluntary muscle. An identical response may be obtained by stimulation of the motor nerve or by injection of acetyl-choline directly into the nutrient artery of a muscle. Many workers believe that muscle tone and voluntary contraction utilize the same mechanism and differ only in number and frequency of impulse volleys. The action of acetyl-choline is enhanced by administration of esserin. Esserin and similar chemicals such as "prostigmine" are thought to inhibit choline esterase thus allowing more effective and prolonged action of acetyl-choline. We have used prostigmine as a reliable test for myasthenia gravis as first suggested by Pritchard and Walker.⁶ Muscular power is greatly increased temporarily in myasthenia and not in any other kind of muscular weakness. Fraser et al⁷ have used an acetyl-choline derivative as a treatment for myasthenia gravis and report good results in two cases. The liberation of excess of acetyl-choline at the motor end plate is thought to account for the relatively rare condition myotonia congenita. Alcohol or quinine lessen the tonic state in these individuals. We had a man of fifty at Queen Square who had myotonia (Thomsen's disease) who, if pushed unexpectedly, would become stiff and fall like a poker, but could handle himself quite well after drinking a bottle of strong ale.

The fundamental importance of the continuous balance between the more or less opposing influences upon autonomic activity has long been known. Overbalance of the mechanism in one direction or the other as seen clinically was studied by Eppinger and Hess⁸, of Vienna, who popularized the terms vagotonia and sympathe-

¹Read before Section on Medicine of Illinois State Medical Society, May 18, 1938, Springfield.

tonia in 1917. These terms should now be replaced by the more exact and descriptive terms, cholinergia and adrenergia, as suggested by Dale. An individual showing the characteristics of relatively small pupils and slow pulse, excessive sweating and salivation, indigestion of hyperacidity type, spastic constipation, hyperactive reflexes, dermographism eosinophilia and tendency to develop allergic symptoms may be termed cholinergic. The cholinergic syndrome may be reproduced in normal individuals by the administration of acetyl-choline. Usually, cholinergic signs and symptoms cause slight discomfort and can only be elicited from the patient by direct questioning; these minor effects are within physiologic limits. Conversely, other individuals may be found who exhibit adrenergia, the signs of which are wide pupils, fast heart, vasomotor instability, perhaps some physiologic elevation of blood pressure, and atonic bowel. Adrenergia has been described by Cannon⁴ as preparation for flight or fight. These signs may be induced in normal people by the administration of adrenalin. Autonomic imbalance cannot always be strictly classified as adrenergia or cholinergia. In many instances the excessive cholinergic activity probably stimulates the adrenals and other chromaffin tissue causing various phases of adrenergia to be superimposed.

It is obvious that in acetyl-choline, the action of which, in therapeutic dosage, directly opposes adrenergia activity, we have a potent substance which should be of great therapeutic value. Acetyl-choline itself is very unstable and many derivatives have been prepared in effort to find one more suitable for clinical use. Acetyl-beta-methyl-choline chloride (Mechoyl) as prepared by Major and Cline⁹ has been used most extensively in this country. It is more stable, more prolonged in its action and does not have some of the undesirable side reactions of acetyl-choline. It may be administered most effectively by subcutaneous injection but may be given by mouth, however, in much larger doses. It may be absorbed from mucous membranes and can be driven through the unbroken skin by galvanic current.

Excessive sympathetic action in local areas may lead to serious organic disease. Peripheral vascular spasm as seen in Raynaud's syndrome and scleraderma are familiar examples. I have reason to believe that atrophic rhinitis and relaxed bronchial musculature with diminished

mucous secretion as seen in chronic bronchitis are due to excessive sympathetic action. Paroxysmal auricular tachycardia and severe atonic bowel may also result from excessive local sympathetonia. Radical destruction of sympathetic nerves has often been carried out to stop symptoms resulting from their excessive activity. Kovaks¹⁰ and others have been successful in producing palliative relief in peripheral vascular spasm, scleraderma, and atrophic rhinitis by driving mecholyl into the diseased area by galvanic current (iontophoresis). We have been able to cause the cessation of attacks of paroxysmal auricular tachycardia by the administration of mecholyl as reported first by Starr¹¹ who states that this treatment is effective in 90 per cent of cases. We have observed diminution of the lumen of atonic bowels in a few cases under the effect of mecholyl. Myerson¹² has reported desirable effects from mecholyl in various types of atonic intestine. Surgeons are reporting good results with mecholyl in postoperative intestinal distention and even paralytic ileus. Acetyl-choline derivatives may be of value in the treatment of chronic bronchitis.

Excessive cholinergic activity is a very frequent form of autonomic imbalance. Profuse sweating, mottling of the skin, dermographism, urticaria, angioneurotic edema and bronchospasm represent the most familiar examples. Cholinergic individuals are often dyspeptic and may have tight pyloric sphincters with hyperchlorhydria. Indeed, Necheles¹³ has recently suggested cholinergia as the fundamental fault in the production of peptic ulcers. He found that acetyl-choline greatly diminished the blood flow through the vessels of the gastric mucosa in dogs and that mucosa partially devitalized is quickly digested by gastric and duodenal juices. We have reproduced epigastric pain in ulcer patients by giving an injection of an acetyl-choline derivative. Acetyl-choline is known to stimulate gastric secretion but there is some controversy concerning its effect on the production of acid. Ivy¹⁴ has shown that the confusing experimental results have been due to variation in dosage. He finds that in small quantity acetyl-choline is a stimulant to gastric secretion but is inhibitory in large dosage. In the particular type of food idiosyncrasy called gastrointestinal allergy one finds relative spasticity of the intes-

tine and often excessive secretion of mucus. There are signs of excessive vagal activity.

Kountz, Pearson and Koenig¹⁵ have proved that vagal stimulation caused constriction of the coronary vessels with diminished coronary blood flow in the revived human heart. Hall et al¹⁶ have recently shown that coronary thrombosis may be produced in dogs by prolonged administration of acetyl-choline and suggests that cholinergia may account for this condition. Incidentally, some of Hall's dogs also developed peptic ulcers. A large dose of an acetyl-choline derivative occasionally provokes substernal pain.

The therapeutic use of adrenalin and the other adrenergic drugs, ephedrin and benzedrine, in the relief of cholinergic symptoms is well known and shall not be considered in detail here. These drugs usually bring about a measure of prompt but temporary relief especially from the allergic symptoms. Benzedrine is now often used to produce relaxation of sphincters for demonstration during x-ray studies of the intestine and may be ant effect on cerebral function limits its usefulness. Atropin directly inhibits acetyl-choline acused regularly to relieve spastic bowel. Its excitation but doses sufficient to be completely effective have very unpleasant side effects such as inhibiting accommodation, causing excessive drying of mouth restlessness and excitability.

We have given ten milligrams of mecholyl subcutaneously to ten volunteers. The reaction which lasts not more than ten minutes consists of peripheral vasodilation, a slight drop in blood pressure accompanied by some tachycardia, sweating, salivation and at times belching and rumbling in the abdomen. The symptoms are not unpleasant. The same dose has been given to thirty individuals who complained of recurrent symptoms of allergic nature. The symptoms peculiar to the individual were usually reproduced within one minute. The asthmatic begins to wheeze; rhinorrhoea and nasal blocking occur in patients with vasomotor rhinitis. Cough is produced in patients who have allergic bronchitis. Urticaria and angioneurotic edema may, but do not always, follow the patients subject to these conditions; the appearance of this type reaction is often delayed. In one patient a flare-up of eczema was induced. I have not been able to reproduce migraine, but can produce allergic-like headache. I am not prepared to advocate a new test for the allergic disorders,

but am convinced that severe allergic patients are hypersensitive, so to speak, to acetyl-beta-methyl-choline chloride and show less reaction to the same dose of adrenalin than an otherwise normal individual.

Since the World war a tremendous amount of work has been done in effort to search out and eliminate specific exciting factors in all allergic patients. Dramatic results from complete avoidance of offending substances occur in a minority of cases. Specific desensitization with protean protein extracts is a satisfactory procedure in a yet smaller percentage of patients. Even when suspected substances are removed from the individual there is often improvement but not cure; signs of autonomic imbalance persist, and the original symptom may be reproduced by incidental illnesses, emotion and pure physical excitants such as cold, barometric changes and dusts. We treated a thirty-seven-year old woman for severe recurrent bronchial asthma during three years by elimination of suspected foods and inhalent substances with little success. Two years ago we committed her imbecile child to a state institution and she has been well since.

Protein sensitization may induce the cholinergic state. The manner of action of specific allergens on nerve endings and the role of the immunologic reactions in patients known to have floating anti-bodies is not known. The action may in part be that of inhibiting choline esterase. It is interesting to note that Freund and Gottlieb¹⁸ and McDonald¹⁹ found that many foreign substances greatly increase the sensitivity of the parasympathetics. The relationship of protein sensitization to cholinergia is probably that of a vicious cycle which may be broken at different points.

The relation of acetyl-choline to histamin has not been satisfactorily explained. The edema which regularly accompanies allergic reactions is probably due to histamin which is liberated from the tissues by action of local excess of acetyl-choline. Horton et al²⁰ have "desensitized" patients, who are sensitive to cold, with histamin.

The cholinergic state is probably a product of modern psychology and methods of living. The condition is said to be rare in the more primitive and leisurely peoples of the world. It is seen most commonly in the worrying, overworking, high strung, ambitious or anxious in-

dividual. There may be a "cholinergic center" in the brain which is set at a higher rate of action. Ranson¹⁷ has found a center in the hypothalamus of cats which, on stimulation, excites the entire parasympathetic system. The primary disorder in cholinergia is functional but prolonged; altered function may lead to serious organic derangement. The most logical treatment is rest, relaxation, mental hygiene and wholesome psychotherapy. These measures cannot always be completely carried out and one is forced to search for a more direct form of therapy. Remedies for the cholinergic state and the ailments resulting therefrom will probably, in the future, be directed against acetyl-choline itself. If choline esterase could be prepared in sufficient quantity and administered to destroy acetyl-choline more effectively as it is liberated we would probably have an effective agent. Nothing of this nature has been offered to date. There may be other means of counteracting excessive acetyl-choline activity and the next great therapeutic advance in medicine may be in this direction.

CONCLUSIONS:

1. Physiologists have shown that acetyl-choline is the chemical released at the endings of the parasympathetic nerves, the nerves controlling sweating and vasodilation, the adrenal gland, and the motor nerve to voluntary muscle.

2. Individuals showing signs of excessive parasympathetic activity may be termed cholinergic.

3. Cholinergia may be the fundamental fault in many functional disorders including the allergic state.

4. Allergic symptoms can regularly be reproduced in allergic patients but not in others by use of an acetyl-choline derivative.

5. An acetyl-choline derivative may be used to control symptoms due to excessive sympathetic action.

6. In addition to judicious application of psychotherapy and adrenergic stimulants in the relief of cholinergic symptoms a search must be made for an effective method of inhibiting acetyl-choline itself.

*Mechoyl for this work was furnished by courtesy of the Merck Laboratories, Rahway, N. J.

DISCUSSION

Dr. G. B. Smith, Alton; Dr. Pearson's paper brings information that is helpful to those in general practice

as well as those having a special interest in disorders of the nervous system. Research and clinical work described in this paper is particularly stimulating to the curiosity of those of us who have been trained in a biologic approach to neuropsychiatry. It also helps bridge the gap, if there may be said to be a gap, between the physiologic and the psychogenic approach to many nervous disorders.

While so far the actual clinical accomplishments have been reported as most evident in some of the less frequent conditions, for example myasthenia gravis on the one hand and myotonia congenita on the other, the implications are tremendous. We may never see a case of either of these, yet we all see allergic syndromes, peptic ulcer, intestinal spasm or atony. We all use daily and recognize the value of epinephrine and its longer acting associate, ephedrine. Yet how often do we stop to think that we are using substances whose action is directly upon the nerve endings of the sympathetic division of the autonomic nervous system. When we and our successors know as much about the clinical uses of cholinergic stimulants and depressants as we know now about these adrenergic ones, we may be carrying them in our ampule cases in the way that we now carry epinephrin. I am of the opinion that we will find in knowledge of the action of the autonomic nervous system explanations for some of the phenomena that have been reported in the paper of Dr. Severinghaus and Dr. Low as well as those reported by the Drs. Dragstedt this morning.

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PROGRESSIVE MYOPIA

(A New Treatment with Base-in Prisms)

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CHICAGO

When asked to prepare a paper for this program, and while attempting to decide upon the subject, the fact that one of us (Thompson) had devoted many years to research and study of myopia in its various forms, led us to choose this subject for your consideration. Its vast importance in young subjects suffering from school myopia, and its more severe form as progressive myopia, makes us feel that the subject is timely.

Statistics: Myopia is a rare disease before the age of five years. Between that age and up to ten years, about eight per cent. of all eyes become myopic. There is a rapid rise during the next few years and by the twentieth year 25% of all eyes become myopic. These figures diminish gradually to 13% by the fiftieth year, then rise again to 19% by the sixty-fifth year.

No one has offered any statistics as to what percentage of all myopic eyes belong to the types under discussion.

Progressive myopia is found frequently in large cities; more rarely in the country and smaller towns. The highest percentage of progressive myopia is in members of the Jewish race; the next highest in the Negro. In a study of 1,444 Jewish and non-Jewish children Sorsby¹ found the percentage of myopia slightly higher in the Jewish children.

History: Of course, the disease under discussion has been recognized as such for several generations, but little progress has been made

in the field of treatment up to the present time, except in those cases found to have lues as their predisposing cause. Once syphilis was diagnosed, strenuous efforts were made to eradicate it, and with the aid of glasses, a certain percentage of cases were checked, but very, very few cases have been cured, and nothing of a definitely curative nature had been discovered previous to our investigation.

During the years 1912 and 1913, which one of us (Thompson) spent in the Fuch's Clinic in Vienna, numerous cases were seen and treated. They were usually members of the Jewish race and the etiology mentioned was usually heredity or syphilis. The only treatment was minus lenses, except in those cases which were suffering from syphilis, as mentioned above.

One of us (Thompson) in 1919, while doing some research work on myopia, treated a case whose correction was minus 6.50 sphere which gave 20/30 vision. Minus spheres of five diopters combined with a total of 3 D. prism base in were prescribed. In six months it was found that the patient could see 20/30 with a minus sphere of five diopters. The lenses were then changed to read minus four combined with a total of 2 D. prism base in, and in six months another test revealed that the patient's vision was 20/30 plus 3, with the minus four lenses.

This case was shown to the late Dr. P. A. Graves, of Chicago, and the treatment explained. Doctor Graves became interested and with one of us (Nugent) published a paper² which was read before this section and which, we believe, was the first paper on the treatment of myopia with base in prisms.

Nomenclature: We shall discuss the etiology under two headings, i.e., those which predispose to the development of the disease, and those which actually produce the disease—predisposing and exciting causes.

The predisposing causes are: 1. vitiated atmosphere; 2. poor light; 3. persistence in holding near work too close to the eyes; 4. certain debilitating diseases or long illnesses; 5. injury to the cornea from trauma or ulcers resulting in formation of scars; 6. simple myopia should be added to the list of predisposing causes of progressive myopia; 7. heredity, usually lues; 8. excessive use of the eyes for close work; 9. lack of proper nourishment.

There are still those who believe that the

¹Read before Section on Eye, Ear, Nose and Throat of Illinois State Medical Society, May 18, 1938, Springfield.

muscles of accommodation should be considered as a part of the etiology in every case of progressive myopia, but our investigations have led us to believe that, while they may be found to be diseased in any given case, they have no influence on the increased refractive power of an eye, either as predisposing or exciting cause.

Henderson³ of England believes that the constitutional factor is a very important cause of myopia. Marlow⁴ has shown that the percentage of muscular imbalance is high in axial myopia and therefore may be a predisposing cause. Pascal⁵ is of the opinion that the constant overstimulation of convergence in children is an important cause. Muselovich⁶ and others made a study of myopia in individuals doing close work and those using the eyes principally for distance, and reported that the percentage of myopia in those doing close work was 24% and in the other individuals, 14%. Livinsohn⁷ thinks that the forward inclination of the head and body is a cause of myopia.

There are four exciting causes, namely: 1. persistent convergence over long periods; 2. a constant tendency to divergence due to the stretching of the internal recti muscles; 3. constant and increasing pull by the optic nerve due to the abnormal position of the posterior pole of the eye; 4. a chemical change in the sclera and internal recti muscles.

Differential Diagnosis: Usually in school myopia there are no changes to be seen in the fundus.

In progressive myopia, about the tenth year, certain changes take place in myopic eyes and if the ophthalmologist examines the patient at this stage he will find the following picture: An error of minus 4.00, minus 5.00 or even minus 6.00 diopters in power; the disc will be red as in papillitis; the blood vessels will be tortuous, dark and dilated. The redness extends into the choroid. This is the first stage of posterior progressive myopia. In a later stage, between the twelfth and twentieth year, there will be an error anywhere from minus 6.00 to minus 20.00 diopters in power, accompanied by a myopic crescent or a choroidal atrophy forming a ring around the optic disc and constituting a posterior staphyloma. This is the second stage of posterior progressive myopia.

Mechanics: We believe a better understanding of the whys and wherefores of our treatment

will be obtained if we review the mechanics of the disease under discussion.

We have mentioned the fact that persistent, excessive convergence along with other conditions is a primary exciting cause of posterior progressive myopia. The patient has developed the habit of holding reading matter too close to the face because of the shortness of his or her arms, and it is the continuation of this habit that starts the eyes on the way to progressive myopia.

You will recall that infinity for close work is thirteen inches and that reading in the finite field produces convergence, which places the internal recti muscles under extra strain. Then, due to the abnormal position of the posterior pole of the eyeball, resulting from the excessive convergence, the optic nerve exerts an increased pull on the entire posterior segment and gradually produces a break in the sclera and choroid, thus lengthening the axis of the eye.

The extra tension on the internal recti muscles traumatizes the sclera and this produces a chemical change in the muscles due to a disturbance of the metabolic processes, and the trauma which they produce in the sclera causes a chemical change in its tissues also. The total result is a further lengthening of the axis of the eyeball and an increased tendency to divergence. Thus the vicious circle is completed.

Treatment: We have developed a treatment which, we believe, practically covers every phase of the etiology involved. We have found it very successful in all cases of axial progressive myopia; less so in the more complicated types, but worth trying in all.

We shall discuss it under six headings and give our reasons for each step:

The first step is the making of the prescription for glasses. The total error should be ascertained. Then 20% to 25% of the sphere removed, and the prism is found by adding prisms base in until diplopia is produced. Now the prism is neutralized until monocular vision is accomplished. The remaining prism is used base in, half over each eye. Suppose the sphere is Ou minus 6.00 and the total prism is four diopters, then the prescription would read Ou minus 6.00 combined with Ou 2 D. prisms base in.

We have failed to find any mention of base in prisms in the literature, except in Parsons'¹¹

book entitled "Discussing the Eye," and that was published after Nugent's article, referred to in the bibliography appended hereto.

The next step is to place the lenses as near to the patient's eyes as is possible without their touching the cilia. This is for the very scientific reason that the longer the focal distance, the larger the object appears to a myopic eye, and, therefore, the less the strain upon it.

The third step consists of special exercises with the myoculator. The patient is seated four feet from the machine, wearing the proper prescription and three diopters of prism base in over each eye in addition. The eyes should be exercised thus for ten minutes, three times a week. The time may be increased, slowly, to twenty minutes.

The next step is a request for special class work, special large type in the books read, and the scientific use of good lighting, either natural or artificial. All use of the eyes for close work must be carefully supervised and a time limit used.

The fifth step is the compilation of a diet list, which will give the patient a properly balanced vitamin intake.

The sixth step is called "medication" and consists of cod liver oil, and iron, quinine and strychnine for rebuilding the muscle power involved.

Jackson⁸ thinks that myopia can be controlled by full correction of the error and a correct posture. Rolett⁹ believes that the correction of the error of refraction has little or no influence on the progress of myopia. He admits, however, that 73% showed advance in progressive myopia, after the error had been fully corrected.

Law¹⁰ uses calcium and parathyroid therapy in the treatment of progressive myopia, and claims that of seventeen cases thus treated, thirteen showed definite improvement.

We believe that, whatever else may be used in the treatment of myopia of any type, the eyes should be prevented from converging, and for this we advise base in prisms.

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DISCUSSION

Dr. O. B. Nugent, Chicago: I have very little to add, but I would like to lay stress on base in prisms for school myopia as well. I have in my files a great many cases of school myopia that has definitely stopped in its progress while prisms are being used, and I believe prisms have had an action in this. The strength of the base in prism that is used has been described. If after six months it is necessary to use stronger sphere, it is assumed that the prisms are not strong enough and stronger ones are used, regardless of what the muscle test may reveal. This has been my practice and as a rule by using stronger prisms the progress of the myopia is stopped.

Dr. Philip Halper, Chicago: I was also going to ask that question as to how the interni muscles in high myopia are stretched when according to the author these cases have convergence excess. In over-exercising a muscle I do not see how it becomes stretched; one finds the opposite. I was glad the author mentioned Dr. Jackson. I asked the latter specifically last fall about the use of prisms in myopia and the prescribing of the full correction regardless of the amount found. He absolutely advised against the use of prisms. In fact in a high myopic correction there is already present a prism base in.

Coming to the other point about correction of these myopia errors, Jackson corrects the usual case fully. When he finds even a -0.25 sphere in a young person under cycloplegia and he is satisfied that there is a myopia of a quarter diopter present, he puts a -0.25 sphere on the patient and has him wear the correction constantly. In doing so, one prevents a very minimal myopia from becoming a moderate one. I agree with Jackson fully for my experience with myopia is in accord with his.

Dr. W. Moore Thompson, Chicago, (closing) Mr. Chairman: In reply to the doctor who stated that in his opinion the case used as an illustration of the results secured by the use of prisms bases in, was a case of regressive myopia, I wish to remind him that the fundus was a classic picture of progressive myopia, and besides an error of -6.50 at the age of 12 years is essentially progressive. Furthermore, it should be evident to the gentleman that the results shown at the end of the second six months' period are positive proof that the case was regressive because of the treatment given.

In reply to the doctor who stated that all myopic lenses are prisms bases in, I will admit that a concavo-concave lens has a prism base in, but it also has a prism base out, the net result being that they neutralize each other, and therefore have no influence on the muscular imbalance which adds its quota to the increase in the error of refraction.

I only need to remind the third gentleman, who took the position that the excessive convergence mentioned as the chief exciting cause, would "essentially produce a hypertrophy of the internal recti muscles and a proportionate weakening of the external recti," that the uniform findings prove the contrary. The gentleman is certainly aware that all myopic eyes that have a squint are divergent, just as all hyperopic eyes that have a squint are convergent, the ambliopias excepted. This very fact gave me the first clue to my treatment.

Others complained that I had not brought a sufficient number of cases before you. Here are a few picked at random from my files:

Mrs. H. N., aged 53—

O D V 20/100, O S V 20/200, corrected

O D $-1.50 -50 \times 180 = 20/20$

O S $-2.00 -50 \times 140 = 20/30$. We have found that we can dispense with the cylinder up to -75 so we gave this patient O D -1.00 , O S -1.50 adding prisms O U 2.00 bases in. V-O U 20/30. At the end of one year this patient saw O U 20/20 with the prescription given her and it was changed to O D -50 , O S -1.00 one prism two diopters base in. A second case is that of Miss G. S. aged 30.

O D -4.50 , O S $-2.25 -50 \times 180$, V 20/20. Was given O D -3.00 , O S -1.75 with O U 3 diopters of prism base in V 20/30. This patient was examined at the end of six months at which time she saw 20/20 with the prescription she was wearing. She was given O D -2.25 O S -1.25 V-O U 20/30.

I could quote you cases for an hour, some changed as many as four times, with a satisfactory reduction in the error each time.

The proof of the pudding is in the eating. Try this method and it will get the same results for you that it has given me.

Dr. Thomas D. Allen, Chicago: I think I am going to steal Dr. Guibor's thunder. Case reports are of first importance in a paper of this kind. The only case report shown was not shown to be progressive myopia. Base in prisms make the eyes turn out. According to the paper one would think the essayists believe that over-action of the interni produces progressive myopia. In concomitant convergent squint we have extraordinary over-action of the interni, but these patients do not develop progressive myopia except in an almost insignificant percentage.

In Doctor Thompson's first case, beginning with -6.00 and each six months accepting less sphere, we do not have a case of progressive myopia but regressive myopia. One first should be sure he has a case of progressive myopia. Probably a definition would have been in order.

HOW THE COUNTY MEDICAL SOCIETY CAN AID THE LEGISLATIVE COMMITTEE

JOHN R. NEAL, M. D.

Chairman Legislative Committee, Illinois State Medical Society

SPRINGFIELD

Along about Easter in every other year a general election takes place in Illinois for the selection of party candidates who aspire to distinguished political preferment. Alternately at these elections are nominated candidates for the office of United States Senator and for Governor and at each of them are chosen the candidates for Congress and for the State General Assembly.

The campaigns are invariably built around the personalities who aspire to the higher offices. Always the fight centers around the man who would be Senator or Governor. Upon him is thrown the pitiless searchlight of publicity and the bitter criticisms of his opponents. He it is who must devise the strategy and carry the banner.

At the same biennial elections are chosen also the party committeemen in every precinct in the State. Candidates for this office come rarely into public prominence. State and National campaigns are never fought around the personality of the precinct committeeman, but these campaigns are never won without his concerted approval and support. Opposition, rebellion or mere indifference on the part of any considerable number of precinct committeemen would be fatal to the success of a political campaign. The precinct committeeman promotes registration and he gets out the vote. He keeps his sensitive fingers on the public pulse. He reports his findings to the party leaders. He is the cornerstone upon which political parties are built and without which the structure of party action and party achievement would crumble.

All successful political action under our form of government operates on the same principle. The chosen representatives of an organization can attain victory in a legislative program only with the aggressive support of the rank and file of the membership. This is equally true of the medical profession, the C. I. O., the

This paper was prepared for the Secretaries' Conference Annual Meeting, May, 1938, but was not presented because of lack of time.

American Legion, the educators, the social workers or any other group. There must be a common purpose buttressed and lifted up on the strength of common and united effort.

In organized medicine as in political parties and all other groups, the position of the officers and other representatives is no stronger than the expressed will of the individuals who make up the membership of the local units. This is particularly true with respect to legislative matters. The American Legion gets what it wants from Congress and from State legislatures because the officers of that valiant organization enjoy the solid confidence and active support of the membership in every city, hamlet and village throughout the country. Local posts of the Legion conform almost unanimously with the policies, the principles and the programs laid down and promoted by the National organization.

The militant Committee on Industrial Organization carried labor into a commanding position with respect to national legislation because the leadership enjoyed the solid and uncompromising support of the locals which sprang up throughout the nation. The support of that group, more than any other, is responsible for the Social Security Act. A large membership, a common purpose, unanimity on policies and program, immediate and vigorous response of local units and individuals to the request for action by the chosen representatives and an alert leadership are the factors responsible for the political ascendancy of labor through the C. I. O.

Opportunities to influence legislation are open to the medical profession on the same basis. Legislative representatives of the profession, no matter how able and alert, can succeed significantly only with the united and active cooperation of the local societies and the individual members. Membership in the local societies is therefore fundamental and of paramount importance. In this respect the secretary of the county society is like the precinct committeeman in a political party. He must get out the vote in the form of memberships in order to place the medical profession in a position to influence legislation to any significant degree.

A strong membership in a local society is effective, however, so far as the general interests of the profession are concerned, only to the degree to which the society conforms with the

principles and policies established by the State society and National association. Division on fundamental principles and policies is fatal to the general legislative program of any group. This has been demonstrated in recent months by wildcat strikes in the ranks of labor. The National legislative program of the C. I. O., as well as the political prestige which the leaders of that group had acquired, was greatly impaired by unauthorized strikes instituted by local units. Political leaders and the public alike lost confidence quickly in the authority of the officers and representatives as spokesmen for the rank and file. The result was a modification of the attitude of political leaders toward labor and a more cautious tendency to follow the advice and counsel of the C. I. O. Today it would be much more difficult to get through Congress a labor bill of radical complexion than a year or two ago.

The American Medical Association develops the policies for the medical profession throughout the country. These policies are based upon what the delegates and officers believe to be the best interests of the public and of the profession from the medical point of view. When these policies conflict or appear to conflict with local interests, the wise procedure of local societies would be to seek the counsel and advice of the State Society before taking public action contrary to established policies. Otherwise the prestige of the spokesmen for the State Society is impaired and their work, particularly of a legislative character, is made more difficult.

The legislative subject of overshadowing interest to the profession at the moment is the matter of socializing the practice of medicine, Senator Wagner, author of most of the reform legislation enacted by Congress during recent years, has introduced a resolution calling for a study of the needs for extending medical care to the impoverished. This measure, which carries an appropriation of \$50,000, is now before Congress. It is the most recent of numerous proposals of the same general character which have been up for consideration in the immediate past. This is fresh evidence that the subject of socialized medicine will be allowed to neither die nor slumber until some satisfactory solution of the problem takes place.

The American Medical Association has already inaugurated a study of the medical needs and the medical facilities of the nation. National

in scope, it promises to be the most comprehensive, the most practical and the most useful of any study ever undertaken or proposed in this field. It contemplates obtaining a report from every practicing physician and dentist in the United States. It proposes to obtain reports on all hospitals, health departments, voluntary agencies and all other institutions and organizations that undertake to provide medical care for the impoverished or needy. The success of this study will bring together a wealth of information never before equaled in magnitude and reliability. It will provide a solid foundation upon which to evolve a sound, practical and satisfactory program of extending medical care in the best possible way from every point of view.

Every county society and every individual physician will be asked to participate in this project. A better opportunity for aiding your legislative committee has seldom before presented itself. The hearty cooperation of county societies and of individual physicians in this study will strengthen as nothing else has the position of the profession with reference to socialized medicine and all other problems concerned with medical care. The information so assembled will give to the representatives of organized medicine the unimpeachable ammunition with which to fight for or against any proposed legislation in the field of medical economics.

It is impossible and even undesirable to attain complete uniformity of thought and action in the medical profession on any socio-medical subject. General agreement can and must be reached, however, on fundamental principles in order that leadership in medical matters may be reposed in medical hands. The successful execution of the study will make this possible.

The successful politician is endowed with a superior talent for inspiring confidence in himself. He has a talent for getting done the things which his constituents wish to be done. He is therefore extremely sensitive to what the folks back home have to say. Concerning legislative matters, therefore, the medical profession must be vocal everywhere and they must say essentially the same things. In no other way under our form of government can any profession or any group command in legislative halls the respect and consideration which is rightfully theirs.

THE DIAGNOSTIC AND PROGNOSTIC VALUE OF THE ERYTHROCYTE SEDI- MENTATION RATE IN GENERAL PRACTICE

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PONTIAC, ILLINOIS

While the erythrocyte sedimentation test is not infallible, and while all of the ills to which the human body is heir are not accompanied by toxemia, it is a fact, nevertheless, that many of the complaints which a physician is called upon to diagnose and to treat are associated with a variable degree of toxemia. In proving or disproving the presence of toxemia in such cases, as well as in determining the degree of toxemia, in verifying the progress of the patient, and, often, in recognizing complications there is probably no single test that requires as little experience, consumes as little time, and necessitates as little extra equipment as does determination of the red cell sedimentation rate. Although total white and Schilling counts are still necessary in some cases it has been my observation that the sedimentation test will, in great measure, eliminate the necessity of these counts. In fact, Bannick, Gregg, and Guernsey¹ state that the sedimentation rate is often a more accurate guide as to the activity of a disease process than is a white count. With this opinion I agree. And, while I realize the significance of a left shift in the Schilling or of a decrease in lymphocytes and an increase in monocytes (or vice versa), in dealing with tuberculosis, I am usually willing to assume that a decrease in the sedimentation index, with associated clinical improvement, generally indicates that the patient is responding favorably to treatment. In fact, this opinion is held by many who treat tuberculosis and most of the tuberculosis sanatoria do erythrocyte sedimentation tests routinely.¹ In connection with the value of the sedimentation test in the treatment of tuberculosis, McGee feels that, where the sedimentation rate does not parallel the clinical course, it is better to rely on the change in the sedimentation index than on clinical impression.¹⁰ I, too, am of the opinion that greater dependence can be placed upon the sedimentation test than on the clinical picture. In fact, in accuracy, the

¹Read before Section on Medicine of Illinois State Medical Society, May 17, 1938, Springfield.

red cell sedimentation index, according to Cutler² and my own experience, rates about 94%.

However, the sedimentation test is not specific, and, as we will see later, there are many acute and chronic illnesses, as well as other abnormal processes, in which the sedimentation rate is increased. While the cause of an accelerated sedimentation index is usually discovered without difficulty, there are cases in which the source of toxemia is difficult, or even impossible, to find.¹ But, in the presence of a significant increase in the erythrocyte sedimentation rate, the physician can feel sure that some abnormal process exists.¹ In fact, pregnancy is the only physiologic process which produces a significant acceleration of the sedimentation index.¹ Contrary to the opinion of some, my observation has been that menstruation has no effect on the sedimentation rate.

While, as stated, an increased sedimentation index tells us that some abnormal process exists, the reverse is not true. There are, in fact, probably a number of disease processes in which a normal sedimentation rate will be found. A well walled-off tuberculous lesion even in the presence of cavitation and positive sputum will be accompanied by a normal, or nearly normal, sedimentation index. In many moribund tuberculous patients I have observed, also, that the sedimentation rate may return to normal, or practically normal, a few days before death. And, although I see very few nephritic cases, I have noted in the small number that I have had under my observation that the sedimentation index is not accelerated.

On the other hand, as previously pointed out, the sedimentation rate is increased in many acute and chronic illnesses as well as in other abnormal processes. Therefore, an accelerated sedimentation index may be expected in influenza, well-developed pneumonia,^{1, 3} rheumatic fever,¹ infectious atrophic arthritis,⁴ acute cholecystitis,¹ acute appendicitis with rupture,⁵ in some cases of acute pelvic inflammatory disease,⁵ in some cases of malignancy,¹ and, as stated above, in most active tuberculous cases.

In influenza and broncho- or lobar-pneumonia there will be a moderate to marked increase in the sedimentation rate and, as the patient improves, the sedimentation index will gradually return to normal. It may, however, require a few weeks after the disappearance of acute symptoms

for the rate to again reach normal. At any rate, failure of the sedimentation index to decrease, or a sharp rise, when the patient is supposedly improving, is very suggestive of the development of some complication.

Similarly, a moderate to marked increase in the sedimentation rate may be expected in rheumatic fever and, as the patient improves, the rate will return to normal. As is true of influenza and of pneumonia a rising sedimentation index during the course of this illness or a failure of the rate to return to normal within a reasonable period of time is very suggestive of some complication, such as pericarditis.¹ In rheumatic fever, Bannick, Gregg, and Guernsey¹ regard the erythrocyte sedimentation test as the most accurate guide of activity and they state, also, that considerable time after the disappearance of fever and joint symptoms may be required for the sedimentation index to return to normal. They feel, too, that the patient should remain quiet until the rate is again practically normal, thereby minimizing the possibility of complications.¹

A moderate increase in the sedimentation rate is usually seen in infectious atrophic arthritis, and this fact may make the sedimentation test of value in differentiating this condition from simple hypertrophic arthritis.⁴ In the latter the sedimentation index is, according to Bannick, Gregg, and Guernsey, rarely accelerated.⁴

Bannick, Gregg, and Guernsey state, also, that in acute cholecystitis the erythrocyte sedimentation test provides a reliable guide as to the activity of the disease process.¹ To quote these writers: "The fever and leukocytosis may have subsided, and the abdominal tenderness and rigidity may have markedly diminished; but if the sedimentation rate remains elevated the surgeon can anticipate considerable activity."¹ They further state that "If the sedimentation rate, instead of gradually falling begins to rise, the surgeon can suspect some complicating factors which may require prompt surgical intervention."¹

In acute uncomplicated appendicitis Lesser and Goldberger⁶ and Bannick, Gregg, and Guernsey⁵ have found that the erythrocyte sedimentation index is not increased. The sedimentation test may be of value, therefore, in differentiating acute appendicitis without rupture from other acute abdominal and extra-abdominal conditions which may simulate other abdominal disorders.⁶

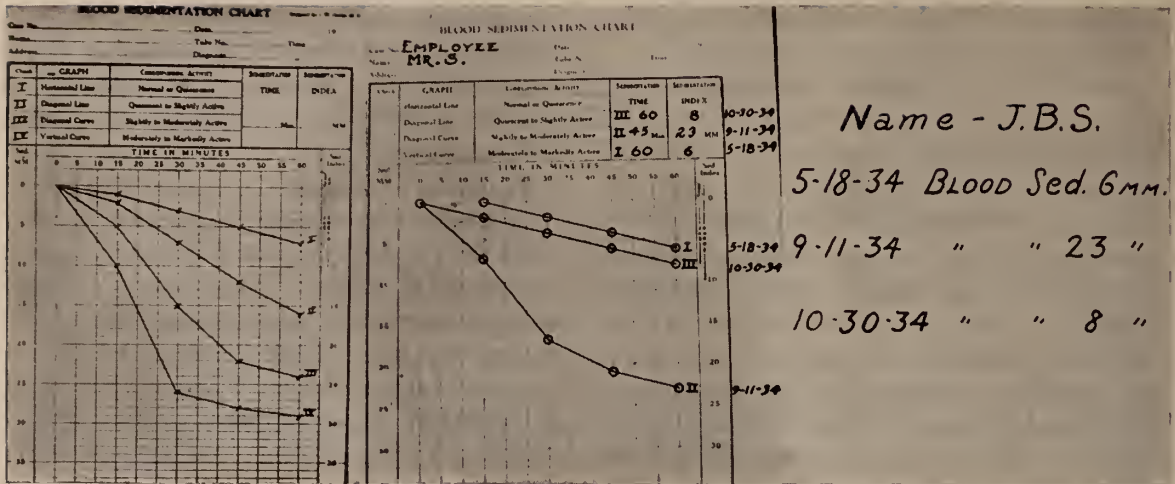


Fig. 1A

- I. Horizontal line
- II. Diagonal line
- III. Diagonal curve
- IV. Vertical curve

Fig. 1B

Case of bronchopneumonia.
Note sedimentation rate before,
during, and after illness.

Fig. 1C

A less time consuming method
of recording rates shown in
figure 1B.

However, where perforation has occurred, the development of peritonitis or of an appendiceal abscess will be followed by acceleration of the sedimentation rate.⁵

In most cases of acute pelvic inflammatory disease it has been found that the sedimentation index is increased.^{5, 6} Therefore, the sedimentation test may aid in the often rather difficult task of differentiating an acute unruptured appendix from acute pelvic inflammatory conditions.⁵

Determination of the sedimentation rate may be of value, also, in differentiating benign from malignant conditions.⁴ While the sedimentation test cannot be relied upon entirely in this differentiation, it has been my observation that the sedimentation index is usually markedly accelerated in malignancy.⁴ However, my experience with the sedimentation test as an aid in the diagnosis of malignancy has been limited to bronchogenic carcinoma. In these cases I have noted that sedimentation rates are usually much higher than those seen in most active tuberculous disease.

As previously stated, sedimentation tests are done routinely in most of the tuberculosis sanatoria¹ and, in my observation, this test has definite value in tuberculosis institutions as well as in general practice. In most cases of active tuberculous disease a moderate to marked increase in the sedimentation rate will be noted, and, as

the patient improves, the sedimentation index gradually returns to normal. On the other hand, where the patient does not respond satisfactorily to treatment the sedimentation rate will either not decrease significantly or, at least, it will not, as a rule, return to normal. However, there are tuberculous cases in which the sedimentation index does not decrease as much as would be expected with the clinical improvement that the patient is making. In such cases we are justified in assuming that some focus of absorption persists in spite of improvement in the patient's condition. It should also be mentioned that the development of an acute pleural effusion is almost always associated with a marked increase in the sedimentation index, but if the fluid does not become purulent a return of the sedimentation index to normal, or nearly normal, usually occurs within a few weeks after the acute symptoms have subsided.

I have seen, also, one tuberculous case in which the sedimentation rate was moderately increased, and the sputum positive for tubercle bacilli, but in which x-ray findings were negative. Although this was entirely speculative, pneumothorax was instituted on the right and the sputum became negative. And, in addition, the sedimentation index returned to normal within several weeks.

The sedimentation test will also be found a

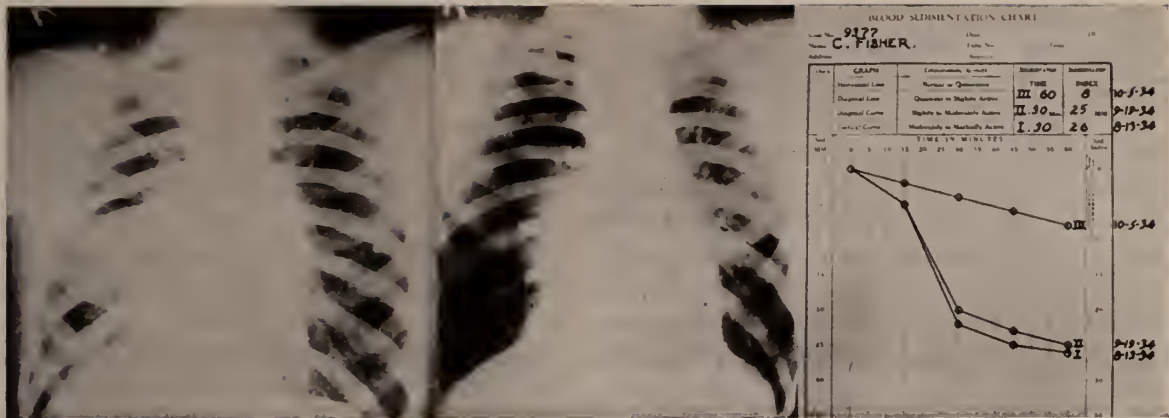


Fig. 2A
Tuberculous disease involving
right middle lobe.

Fig. 2B
Same patient with satisfac-
tory collapse of right lung.

Fig. 2C
Cutler graphic chart of same
case. Note marked reduction in
toxemia following institution of
pneumothorax.

diagnostic aid in two other important groups of cases. The first of these are patients who have some pathology but who are without subjective or objective symptoms. As an example may be cited tuberculous cases who claim, at least, to be asymptomatic. Another illustration would be the utilization of the sedimentation test as a part of our examinations of cases in out-patient clinics and of large or small groups such as factory employees. A significant increase in the sedimentation rate in such cases tells us that some abnormal process is present.

In the second group are hypochondriacs and other patients who feign symptoms. In these cases a normal index gives us reasonable assurance that no infectious process, or toxemia, exists.

While there are several methods for determination of the erythrocyte sedimentation rate I have used Cutler's 1 c. c. technique for years and I have found it entirely satisfactory.² Anyway, the adoption of some one method of doing the sedimentation test would prevent the confusion arising from the employment of different techniques.

However, irrespective of the method utilized, determination of the sedimentation index is dependent upon the rate of fall of the erythrocytes. The rapidity with which these cells drop has been found to be determined, in great measure, by the composition of the plasma rather than by the red cells themselves. Where the sedimentation rate is increased it has been noted, also, that there is an alteration of the albumin-globulin ratio, there being a decrease in albumin and an increase in globulin.⁷ Because of the fact that a marked re-

duction in the number of erythrocytes may influence the sedimentation index the corrected sedimentation rate has been utilized to some extent.⁸ However, in actual practice, the error is so small that correction is seldom necessary. In fact, even in the presence of anemia, McGee advises against an attempt to correct for this condition, his opinion being that the anemia is a part of the clinical picture.⁹

At any rate, in preparing to do erythrocyte sedimentation tests very little equipment other than a luer and needle is necessary. The additional equipment that will be needed will be a few Cutler 1 c. c. sedimentation tubes, a tube rack, some 3 per cent. unsterile sodium citrate, and, if desired, Cutler graphic sedimentation charts.²

In the sedimentation tube is placed .1 c. c. (or slightly more, not less) of sodium citrate. The tube is then filled to the zero mark with the patient's blood and agitated gently until the citrate and blood are well mixed. Improper mixing will result in clotting and make it necessary to repeat the test.

Since the sedimentation rate is increased by heat and decreased by cold, the tubes should be kept at a temperature of approximately 70 or 80 degrees Fahrenheit while readings are being taken. This requirement is usually met without difficulty, but during warm summer weather it is advisable to put the rack and tubes in a cool place such as a basement or, for that matter, a small water-cooled compartment may be built for that purpose at a very small cost.

In accordance with Cutler's technique² I at first read these tests at five minute intervals for the first half hour and every ten minutes for the last thirty minutes. However, unless one wishes to demonstrate the line or curve graphically such frequent readings are, in my opinion, unnecessary. For that reason I next began taking readings every fifteen minutes, and now I read the test only once—at the end of one hour. Here, I should state, also, that where it is inconvenient to read the test at the end of the first hour the tube may be re-agitated and read even ten or twelve hours later without any appreciable change in the sedimentation rate.

When graphic charts are used, readings taken at, say, ten or fifteen minute intervals may be indicated on the chart in their respective places. A line drawn through these points will represent graphically what Cutler² refers to as the line or curve for that particular patient. According to Cutler,² the lines or curves thus formed may be classified as follows:

1. The horizontal line, or normal, denoting absence of toxemia.
2. The diagonal line, indicating a slight degree of toxemia.
3. The diagonal curve, indicating a moderate degree of toxemia.
4. The vertical curve, indicating a severe degree of toxemia.

(See figure 1A)

The first of these, the horizontal line, is, as stated above, normal and, for the line to be a horizontal one, the total fall in one hour should be eight mm., or less for the male, and ten mm., or less for the female. Therefore, readings within these normal ranges eliminate the absorption of toxin from any source. However, sedimentation rates which exceed these normal limits indicate the degree of toxemia or cell destruction. Where the sedimentation index is increased the degree of toxemia may, as previously stated, be classed as slight, moderate, or marked. A sedimentation rate above normal and not exceeding 15 or 16 mm. denotes a slight toxemia and corresponds to what Cutler² designates "the diagonal line;" from 16 or 17 to 24 or 25 mm. indicates a moderate degree of toxemia and, in turn corresponds to Cutler's "diagonal curve;" and sedimentation rates above 26 or 27 mm. are evidence of marked toxemia and the curve is usually a vertical one. High sedimentation rates, particularly those above 27 or 28 mm. are generally seen in very sick patients.

Although a sedimentation index of 10 mm. or less is considered normal for the female I have found that rates of 14 or 15 mm. are sometimes observed in seemingly normal women and apparently are not necessarily pathologic. In senile patients of either sex I have observed, also, that a slight increase in the sedimentation index is often of little or no significance. Therefore, the sedi-

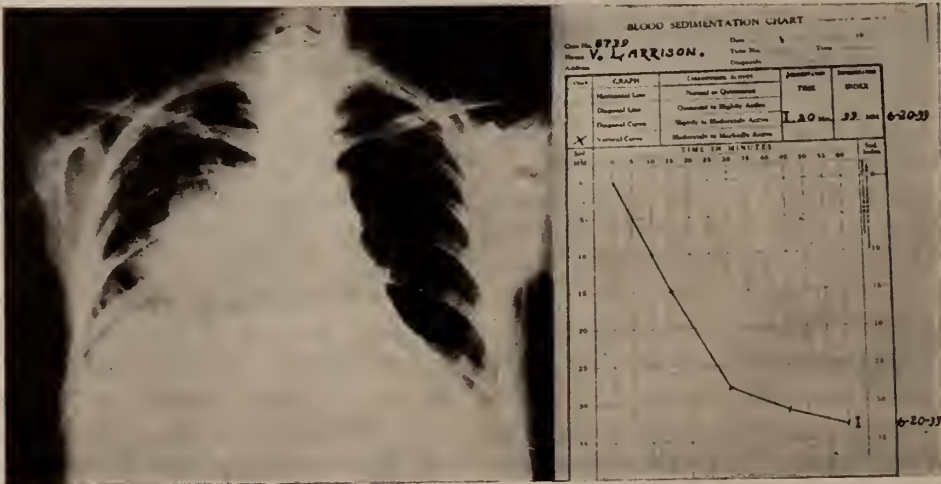


Fig. 3A
Bronchogenic carcinoma.
Note dense mass extending into
right lung field.

Fig. 3B
Graphic chart of same patient.
Note high sedimentation rate
often seen in malignancy.

mentation test must be interpreted in connection with other clinical and laboratory evidence.

While graphic charts are impressive and while some feel that the type of curve is important they are not, in my opinion, necessary. For that reason I now use no special laboratory sheet for sedimentation tests. In fact I have long since begun recording sedimentation rates in the easiest possible way; simply putting down the date, the name of the test, and the reading at the end of one hour.

A few cases will show, first, that the sedimentation index usually coincides with the condition of the patient and his or her clinical progress; and, second, that the simplest and least time consuming method of recording sedimentation rates seems to be satisfactory.

Case 1. This patient had a sedimentation index of 6 mm. 5-18-34. On 9-9-34 he developed an acute bronchopneumonia with the usual symptoms, his temperature reaching 103. A sedimentation test was taken 9-11-34 and his rate was 23 mm. However, he made satisfactory progress and his rate was 8 mm., or again normal, 10-30-34. Figure 1B shows a regular Cutler graphic chart of this case and in figure 1C we see the same sedimentation indices recorded in the simplest and least time consuming manner.

Case 2. This patient had pulmonary tuberculosis, his involvement being the right middle lobe, as we see in figure 2A. His sedimentation rate at that time, 8-13-34, was 26 mm. Pneumothorax was instituted, as we see in figure 2B, and he made excellent progress. In fact, his graphic chart, figure 2C, shows a sedimentation index of 25 mm. on 9-19-34 and 8 mm., or normal, 10-5-34. Incidentally, these rates could have been recorded more easily, as is shown in figure 1C.

Case 3. This case is one of bronchogenic carcinoma, the diagnosis of which was verified by autopsy. In figure 3A is shown a film of the chest of this patient and in figure 3B we note the high sedimentation rate which is often seen in malignancy.

SUMMARY AND CONCLUSIONS

1. While the erythrocyte sedimentation test is not infallible or specific it is, nevertheless, a simple method of proving or disproving the presence of toxemia, of verifying the progress of the patient, and of recognizing complications.

2. Although the sedimentation test does not displace the total white and Schilling it is often a more accurate guide as to the activity of a disease process than is a white count.

3. A significant increase in the sedimentation rate, except in pregnancy, tells us that some abnormal process exists and the source of toxemia can usually be found without difficulty.

4. The sedimentation index is accelerated in many acute and chronic illnesses as well as in many other abnormal processes. Among the causes for an increased rate are pneumonia, tuberculosis, infectious arthritis and malignancy.

5. However, the sedimentation rate is not increased in acute uncomplicated appendicitis. For that reason the sedimentation test may be of value in differentiating an acute unruptured appendix from other acute abdominal and extra-abdominal conditions.

6. In the treatment of an acute infectious process such as pneumonia or rheumatic fever a failure of the sedimentation rate to decrease, or a sharp rise in the index, is very suggestive of the development of some complication.

7. The sedimentation test may be an aid in differentiating infectious atrophic arthritis from the simple hypertrophic form, the rate being as a rule normal in the latter.

8. This test may help us to differentiate malignant from benign processes.

9. The sedimentation test is done routinely in most tuberculosis sanatoria.

10. It will help, also, to differentiate cases who have pathology, but who are without symptoms, from those who feign symptoms.

11. This test is not, in my observation, affected by menstruation.

12. There are several methods of determining the sedimentation rate, but Cutler's 1 c. c. technique seems entirely satisfactory and there would be an advantage in the employment of some one method of doing this test.

13. The rate of fall of the red cells is dependent upon the composition of the plasma rather than upon the erythrocytes themselves. When the sedimentation index is increased there is a decrease in albumin and an increase in globulin.

14. While a marked degree of anemia may influence the sedimentation rate correction of the index for this condition is not necessary.

15. In preparing to do the sedimentation test the only additional equipment that will be needed will be sedimentation tubes, a tube rack, and 3 per cent. sodium citrate.

16. One-tenth c. c. of sodium citrate is placed in the tube which is filled to the zero mark with blood and agitated gently until well mixed.

17. The tubes should be kept at a temperature of approximately 70 or 80 degrees while being read.

18. Only one reading need be taken—at the end of one hour—and, if inconvenient to read the test at that time the tube may be reagituated and read ten or twelve hours later without an appreciable change in the rate.

19. Graphic charts are not, in my opinion, necessary, it being easier and equally satisfactory simply to record the date and hour reading.

20. Normal sedimentation rates are 8 mm. or less for the male and 10 mm. or less, for the female. However, rates of 14 or 15 mm. are sometimes seen in apparently normal young women and in senile patients of either sex.

21. Sedimentation indices which are above normal indicate the degree of toxemia which may be slight, moderate, or marked.

22. Rates that are above normal and not exceeding 15 or 16 mm. indicate a slight degree of toxemia; from 17 mm. to 25 mm. denote a moderate degree of toxemia; and rates which are above 26 or 27 mm. are evidence of a marked toxemia.

23. A normal or nearly normal sedimentation index may be seen in moribund tuberculous cases.

24. Tuberculous disease that is well walled-off will not increase the sedimentation rate.

25. While there is little chance of error in doing the sedimentation test, if the rate does not coincide with the clinical picture repetition of the test is advisable.

26. The sedimentation test is, in my opinion, a valuable diagnostic and prognostic aid and it should be utilized by every physician.

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DISCUSSION

Dr. Seymour J. Cohen, Chicago: Dr. Stokes gave a very interesting review of the subject of the sedimentation rate as applied to general medicine. He has presented the subject matter very clearly and thoroughly.

My experience with the sedimentation test has been chiefly in tuberculosis. For the past four or five years we have used this test routinely on all the patients admitted to the Municipal Tuberculosis Sanitarium in Chicago.

I think that Dr. Stokes, in using the Cutler method has chosen the simplest and best method for determining the sedimentation rate. However, we have modified the technic slightly in that we take only two readings, one at the end of fifteen minutes and one at the end of thirty minutes instead of an hour.

The chief value of the sedimentation test is to determine how rapidly the blood falls in the shortest period of time.

Cutler and other investigators on this subject have shown that there are three distinct phases in the sedimentation rates. The first phase is called the clumping phase which lasts about five to ten minutes. During this time the individual's red blood cells clump together because the individual cell settles, if at all, very, very slowly, and in order to fall they must form little clumps of cells. The second phase is the sedimentation phase which lasts from ten to thirty or forty minutes. In this phase the real value of the test lies. The third phase is the stage of packing when the cells pack together according to their cell volume.

If one reviews the sedimentation curves as seen in the literature, it will be noted that the greatest fall occurs in the first thirty minutes, and after that the fall is more or less gradual. Therefore, I think that more information is obtained in using the thirty minute period of time than the hour.

I quite agree with Dr. Stokes that there is no need to correct the sedimentation rate for anemia. The majority of the patients that we see at the Sanitarium have a red count around four million per cubic millimeter. In those cases with marked anemia the test has no value whatsoever.

The mechanism of the fall of the red blood cells in the plasma is not definitely known. There are many theories. The most commonly accepted one is that the rate of the fall of red blood cells is proportional to the increase of fibrinogen in the blood or to an increase of the albumin-globulin ratio in the blood.

The sedimentation test is chiefly valuable as a prognostic index in chronic diseases, and as an index of activity in pulmonary tuberculosis.

In chronic diseases, such as tuberculosis, if one repeats the test at frequent intervals, one learns much about the progress of the disease, especially if the findings of the test are coordinated with other laboratory physical findings.

The sedimentation rate is one of the few laboratory tests at our command that gives us a tangible method of determining activity in pulmonary tuberculosis.

RATIONALIZATION OF PRE- AND POST- OPERATIVE TREATMENT OF ABDOM- INAL SURGICAL CONDITIONS

GUY S. VAN ALSTYNE, M. D.

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Let us begin with the patient's entrance into the hospital, follow him to the operating table, omit the operation itself, but give our attention to him again the moment the operation is completed and follow through to the day of discharge when he receives his final instructions.

Some of us can still recall rather vividly the pre-operative preparation of former days when the patient was admitted two or three days ahead, put to bed, starved and purged, thoroughly dehydrated, and then operated upon. This procedure has now been practically reversed: food is not withdrawn for more than twelve hours, fluids are replaced instead of forbidden, and a simple cleansing enema is given the preceding evening. The patient must be admitted early enough so that all preparations can be completed in time to allow a full night's rest. Even though, in operations of election, the case has been thoroughly studied in the surgeon's office, still the routine blood counts and urine analysis must be made, the operative field prepared, the history taken, and the physical examination made and recorded by the intern. Patients, however, find it difficult to understand why they must enter the hospital early in the afternoon when no one does anything for them or to them until late after the evening meal. An enema given at 11 P. M. is not conducive to peaceful slumber.

It is usually well to give a simple cleansing enema the night before, but certainly never on the morning of operation. A morning enema puts the bowels in a state of unrest during the operation and causes increased "gas pains" post-operatively. One of the barbiturates, early enough to produce its effect by ten o'clock, should be given if there is any question about the patient's ability to go promptly to sleep and to remain asleep. I find two allonal tablets given at eight P.M. satisfactory. The order should not be written: "Give if needed for sleep." If this is done, the nurse will wait until midnight to see if the patient will fall asleep naturally,

then if he does not, will give the sedative at that time, producing sleep, if at all, at two or three o'clock in the morning.

Hair should be removed far enough from the field of operation to allow adhesive plaster to be placed on hairless skin. This precaution is frequently overlooked, especially in inguinal hernia operations and in males with hairy backs and buttocks. A good rule is to order all preparations for abdominal surgery to extend from the nipples to the juncture of the upper and middle thirds of the thighs and well around on the back, and always to include the pubic and anal regions.

A light or soft supper should be ordered. Digestion is not at its best when one is anticipating a surgical operation. I have seen post-operative vomitus contain the food eaten for luncheon of the day before, which normally should have been thoroughly digested and out of the stomach in four to six hours. If the patient is at all dehydrated from previous vomiting or hemorrhage, fluids should be fully restored pre-operatively; by mouth if possible, otherwise parenterally. Hypodermoclysis or venaclysis may be given during the operation. Lactose in fruit juices or glucose into the vein or under the skin as prophylaxis against liver insufficiency, with blood transfusions in severe anemias, are proper procedures.

The choice of anesthetic and preoperative medication should largely be left to the judgment of the anesthetist, if a physician, especially the dosage and time of administering the latter. I personally favor scopolomine with morphine. The patient is then usually asleep when brought into the operating room, or at least in a "I-do-not-care-whether-school-keeps-or-not" state. The amnesia produced is also a post-operative aid. Psychotherapy, at least in a negative way, should be practiced; at least nothing should happen that might add to the patient's apprehensions and anxieties. The following is a vivid illustration of how not to manage an anesthetic: A woman needing a simple abdominal operation insisted upon going to a strange hospital because of its nearness to her home. This patient was very neurotic, hypersensitive, and extremely apprehensive. To minimize her alarm I arranged a definite plan with the anesthetist the day before: she was to go to the patient's room in the morning and say: "I am going to give you your

enema," then give an avertin anesthetic. The patient would go, unconscious, to the operating room and all would be well. The next morning, however, before making the incision, I observed the patient's eyelids flutter. I spoke to her and she answered. It was necessary to resort to gas and finally to ether to bring about complete anesthesia. Later I found that the anesthetist, instead of following my instructions, had rushed into the room, enema can in hand, and finding the patient out of bed, had "bellowed" at her: "Get back into bed; I've got to give you your anesthetic." The patient, never having heard of a rectal anesthetic and knowing nothing of my attempted subterfuge, became so disturbed that the avertin was not retained and my carefully laid plan came to naught.

Sufficient help should be present to transfer the patient with great care and gentleness from the bed to the cart, the cart to the table, and especially, because while under an anesthetic the patient's muscles cannot defend, from the table to the cart and the cart to the bed. I recall one patient who complained of severe sacro-iliac pain immediately on awakening and for days afterwards. Many discussions of this have appeared in the literature.

Avoid loud talking and other disturbing noises during induction of anesthesia; especially avoid handling and moving the patient in this stage. The same caution holds for the waking period. Dressings should not be applied while consciousness is returning. The patient will retain these pre- and post-anesthetic impressions and swear that the surgeon began the operation before he was asleep or that he was not asleep at all and felt everything, and he will persist in secretly believing this despite profuse explanations.

At least all pelvic cases should be catheterized just before operation.

Post-operative Care. Adhesive plaster strips, applied to retain the dressings, should reach well past the curve of both sides of the body to give proper support. Alton Ochsner suggests that they should completely encircle the body. Sudden vomiting, coughing, or sneezing produces a sudden terrific increase in intra-abdominal pressure. Straps applied properly help defend against this violent force; those merely lying on the surface do not. I believe that all post-operative separations of abdominal wall wounds occur in the first day or two, and usually from these

forces, even though they are not discovered for days or even months afterwards.

Patients having had abdominal operations, even though their anesthetic has been gas, local, or spinal, are not usually ready to take even water by mouth for the first twenty-four hours. There is present a degree of paralytic ileus from exposure and handling. Parenteral fluids should be given during this period by hypodermoclysis or venaclysis. The first is automatic; the patient will absorb it only as fast as the body needs it. I had one patient who took 3,000 cc. in one and one-quarter hours. Venaclysis has no such automatic safety valve and may be crowded, to the detriment of the patient's circulation. Specify that these fluids be spaced equally throughout the first twenty-four hours rather than allow all to be given during the first four to six hours, then none for the next eighteen. The patient will complain less of thirst if this plan is followed. Alternate 5 per cent. glucose solution, 1,000 cc. with physiological salt solution, 1,000 cc. Never give 5 per cent. glucose in physiological salt solution by hypodermoclysis, since this is a hypertonic solution. Maddock and Collar (Water Balance in Surgery, J. A. M. A., 108: 1, 1937) have shown that post-operative patients need around 7,000 cc. of fluid during the first twenty-four hours, to replace that lost through bleeding, respiration and perspiration. The average patient will absorb only from three to four thousand cc. if given under the skin. The amount they absorb is probably the amount they need, despite these statistics.

I have always argued against overheating the post-operative patients. Body temperature must be maintained but they do not need a turkish bath. The paper to which I have just referred demonstrated that body fluids were first lost by respiration and perspiration, lastly by way of the kidneys. Its authors urged that we do away with "the old-fashioned post-operative 'ether bed.'" Fresh air is of vital importance to patients recovering from an anesthetic—fresh air but not a direct draft. Yet I know surgeons who bottle up patients routinely for three days—no fresh air, many blankets, no baths, and they do this even in July!

Although I feel strongly that no routine plan can exist for post-operative care—that each case must be individualized—the diet for the average patient for the second twenty-four hours can usu-

ally be ordered as follows: "Tap-temperature water and hot tea as freely as tolerated; supplement with parenteral fluids to equal 3,000 cc. of total fluids for the next twenty-four hours." For the more serious abdominal cases I feel that a leap from "surgical" to "nourishing" liquids is rather abrupt. I also feel that patients at this stage do better on small amounts every three hours than on larger amounts three times a day. So for the third day I order: "Sofkurd milk; cooked farina or cream of wheat gruel, thinned with "Sofkurd" milk; thin, non-greasy broths, and emphasize the "NON-greasy." Grease often has a rancid taste and at best is nauseating to the patient recently operated on. "Sofkurd" milk is not a solid food as is the untreated whole milk. Cereal gruels should really be "gruels," fluids capable of being poured through a nursing nipple with holes enlarged to the size of a hat-pin. Rotate these three articles, feeding small amounts every three hours, and give, in addition, water, tea, and very dilute fruits juices (undiluted cause gas pains) as freely as tolerated between feedings. On the fourth post-operative day, in the average case, one can order "nourishing liquids;" the next day, "soft," then "light," and finally "general," changing as rapidly as the patient will tolerate it.

Morphine is probably our "best bet" in the care of our post-operative abdominal cases. Use it freely enough to keep the patient comfortable. It has been thoroughly demonstrated by Alton Oschner and others that it does not cause intestinal paresis, but rather stimulates smooth muscle to rhythmical contractions. Codeine, on the other hand, does not stop pain and definitely constipates. I agree with H. M. Richter, whom I heard say: "Only cowards give codeine." Ordinarily $\frac{1}{4}$ grain of morphine is not too large a dose. A rule, existing in many hospitals, limiting a p.r.n. morphine order to a certain number of days, is, to me, ridiculous. If the order is written "give p.r.n. for pain," the order should automatically cancel itself and so need no rule. The barbiturates can be given for restlessness unassociated with pain. For patients unable to take them by mouth there is sodium luminal for hypodermic injection. If a post-operative patient has abdominal pain on the third day or later, gas pains should be suspected, and unless there is some existing contra-indication, rectal siphonage followed if necessary by a small enema

should be tried before morphine is resorted to. This will often remove both the pain and its cause. Too often, especially at night, the intern will 'phone an order for morphine or the nurse will take advantage of one on the chart without an attempt to remove the cause, which might make the morphine unnecessary.

The Wangenstein duodenal suction has proved one of our greatest boons in the post-operative care of abdominal surgical cases and has saved many lives. Institute this or some modification of it early. Allow not more than two or three post-anesthesia emeses. Do not wait for the patient to develop a dilatation of the stomach, acidosis, or evisceration from repeated violent vomiting before using this procedure. It is far more efficient in the treatment of paralytic ileus than ileostomy ever was. It has recently been pointed out (F. W. Taylor, M. D., *Nasal Tube Gastric Suction Resulting in Alkalosis and Death*, J. A. M. A., 109: 267, 1937) that the custom of giving fluids freely by mouth during duodenal suction is dangerous. Sips of water or tea while and if the apparatus is functioning properly are permissible, and psychically, at least, quench thirst, but larger amounts acts as a continuous gastric lavage and result in an alkalosis by removing the gastric hydrochloric acid. In many operations upon the gastrointestinal tract: resections of the stomach or bowel, gastro- or entero-enterostomies, and bowel obstruction, I place the Levine tube immediately before operation, aspirate the contents of the stomach, leave it in place during the operation, and hook it up to the suction apparatus immediately afterward.

Looking back through earlier hospital records I find, usually ordered for the third post-operative day: epsom salts; castor oil, citrate of magnesia. My last crime, prior to discontinuing post-operative catharsis, was routinely, "milk of magnesia, ounces 1 every hour for three doses; four hours following the last dose a 2, 4, 6 enema!" And even then most of the patients survived! I have not given a post-operative cathartic or laxative in years. Now, when the patient's bowels are beginning to "wake up" and gas pains begin usually on the third or fourth day, I write an order like this: "Rectal tube, siphon method, p.r.n. for gas pains. If this fails to relieve, give a 1, 2, 3 enema." If surgery has been on the bowel I fear early large enemata. An appendectomy is a bowel resection. To throw a large

column of water against the site of the amputation might cause seepage. The 1, 2, 3 enema stimulates but does not wash the colon. A glycerine suppository may be all that is necessary. It is surprising how many patients will get relief from the rectal tube alone, then without any enema move their bowels spontaneously on the fourth or fifth day. I have not mentioned the newer drugs: prostygmín and pitressin. I seldom use these, but do occasionally when other simpler means fail—never pre-operatively and never routinely. I believe that I have twice seen a foreign protein reaction from the latter.

Four-hour temperatures should be kept up well into convalescence and rectal readings taken in the very ill.

It has been pointed out by Alton Ochsner and others that catheterization does not cause cystitis but that over-distention of the urinary bladder does. Although I have no routine, I frequently order catheterization every eight hours post-operatively and always following hysterectomy. In hysterectomies the reflexion of the peritoneum over the bladder has been sutured over the cervical stump or vaginal vault. An early pull on these sutures by a distended bladder rising upward under this peritoneal flap could and probably often does tear out these sutures, leaving a raw surface to invite adhesions of loops of bowel, perhaps even an intestinal obstruction!

Whenever the patient complains of pain in the incision, the wound should be promptly inspected. There may be a hematoma; a beginning so-called "stitch abscess;" or a wound margin separation. Fever will not always show on the chart with a beginning abscess, nor do signs of bowel obstruction need to be present with separation or even with evisceration. If there is a thin sero-sanguinous fluid soaking through the dressings on the second, third, or fourth day, or even later, suspect wound margin separation and take out a skin suture to investigate, especially in a patient who has coughed, sneezed, or vomited. If the patient says: "I moved quickly," "I raised up," or "I coughed," or "I sneezed and felt a sudden sensation in my 'stitches' as though they had torn open," LOOK! Don't laugh it off. A doctor removed stitches from a pelvic laparotomy wound on the afternoon of the tenth post-operative day, applied a small dressing and left. Soon afterwards this patient sneezed, felt a peculiar sensation in her incision, promptly called the nurse

and told her she thought her wound had opened. The nurse, instead of examining the wound or calling the intern, said: "Oh! they all say that" and left. The patient then peeked under the dressing and saw two loops of small bowel protruding from the opening!

Though there has been much written on separation of abdominal surgical wounds, as yet no adequate explanations have been given. It is my opinion that these always occur early—on the second or third post-operative day—due to sudden violent increase in intra-abdominal pressure from vomiting, coughing or sneezing. They are not usually discovered that early unless symptoms appear: the thin bloody fluid already mentioned or signs of bowel obstruction from the pinching of loops between the open margins of the muscle and fascia. I have explored these cases as early as the third day post-operatively and found the fascia widely separated and rolled back, the peritoneum open, abdominal viscera presenting and held together with plastic exudate, a large amount of thin blood-tinged fluid, and, most surprising of all, the cat-gut nearly gone—only a few short strands, thin and frazzled, and a few knots remaining. From my experience I feel that such separations in clean cases should always be immediately resutured; in the presence of intra-abdominal or wound infections, strapped and packed with gauze.

When are we to allow these patients to leave the bed? Again there cannot be rules. I allow a patient with a McBurney incision up on the second or third day. Patients with long incisions, such as those for gall bladder or pelvic surgery, I usually keep in bed eight days. I believe inguinal hernia cases should remain in bed eight days. Here there is a distinct pull on the line of suture at Poupart's ligament when the abdominal muscles contract to maintain the erect position.

When remove skin sutures? When the skin is healed. This varies greatly with different people. I have removed them all the way from three to twelve days. Left too long, they cut; removed too soon, the skin wound gapes.

How shall we support surgical abdominal wounds after removing skin sutures and allowing the patient up, if at all? "Bridges" of adhesive tape are only as strong as their narrowest part, so I never use them. Instead, I place the full width directly on the wound. Unless these

straps reach well around posteriorly past the side curves of the body, they do not support. Zinc oxide adhesive applied directly to a wound never causes infection. In fact, over a granulating surface, epithelium will bridge across under it quicker than it will in the open spaces. Epithelialization under zinc oxide adhesive was demonstrated by Emil Beck twenty-five years ago. Furthermore, I do not believe that abdominal surgical wounds are ever infected post-operatively from without.

I usually terminate an average case by allowing first the back rest, then a chair, walking the following day, and home that evening or the next day. Patients should be watched very carefully the first day out of bed; they not infrequently faint and fall.

How shall we treat infected abdominal wounds? Don't fuss with them! Establish free drainage, then do nothing more excepting to keep them clean and maintain drainage, i.e., keep them open. Dyes, Dakin's solution, peroxide of hydrogen irrigations, frequent probings, vaccines, bacteriophages, and what not, in my opinion, are just so much useless annoyance to the patient. Mine, with nothing done to them, heal just as quickly or even more quickly than those receiving "monkey-business" treatment.

Give your patients detailed instructions on leaving the hospital regarding their conduct at home. They expect it and are entitled to it. Do not leave them out on a limb. They will want to know about a "belt." Their friends always tell them they will need one. "My doctor made me wear a belt for six months." Again, there is no rule, but I usually say no, excepting in cases of unusually fat individuals with poor fascia; even then it is my opinion that a belt will not support fascia sufficiently well to prevent post-operative herniae if such are going to occur. I feel that splinting the abdominal muscles will allow atrophy from disuse, predisposing to, rather than preventing, herniae. In our mothers' day girls were taught at puberty that they must don a corset and wear it from then on. The result was that whenever one of these women laid aside her corset for fifteen minutes one could hear groans of "Oh! my gosh! my back!" If my patient is a woman I tell her to wear whatever she has been accustomed to, no more and no less.

Explain the possible occurrence of the so-

called "stitch abscess," so that if it should occur after reaching home they will promptly get in touch with you before it dissects and undermines a large area. Advise about exercise. I have known patients, walking about the hospital for two or three days before leaving, to go to bed for two weeks on reaching home because they thought they should; someone they knew did and they had not been told differently. Advise them that if they notice something wrong, or even think something is wrong, to see you at once. One patient after complete hysterectomy spotted blood for just one year before showing up for examination. She said she thought that was what it was supposed to be. Examination revealed a small mass at the vault of the vagina the size of a match head—probably an endometrial transplant. One application of silver removed it and it was completely healed in less than a week.

The final word should be to insist upon a definite appointment for a post-operative "check-up."

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UNDULANT FEVER

A Major Public Health Problem

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The term undulant fever has been generally accepted to denote a disease originally known as Malta Fever and since variously known^{1,2} as Mediterranean, Rock, Gibraltar, Neopolitan or Cyprus fever, Bruce's disease, Brucellosis, and Bang's disease. Undulant fever has been adopted officially and appears to have the approval of most clinicians and editors. The term brucellosis is in favor among research and laboratory workers and appears to be gaining in popularity. The history, epidemiology and geographical features have been well described by previous authors^{1,2} and will be mentioned but briefly. It is proposed to relate personal experiences with the disease, to call attention to its prevalence, especially in the chronic form, and to emphasize its importance as a public health problem.

Recently we reported to the Illinois Department of Public Health seventy-eight cases in various stages of the disease, the diagnosis having been made by consideration of the symptoms and confirmed by positive skin test or specific

agglutination or both. Since our community differs in no way from thousands of others in the middle west it is suspected that a like prevalence must exist in other localities. There are, in addition, other patients suspected of having the disease because of suggestive symptoms but whose skin and agglutination tests are negative. Other members of the profession have accused us of over-enthusiasm and suspected us of misinterpreting the significance of the skin reactions and of making diagnoses on insufficient evidence. We frankly admit a degree of enthusiasm, the reason being that many of our patients suffered for years from symptoms for which no cause could be found until the specific tests for undulant fever were found positive and a diagnosis could be made. In the matter of the interpretation of the skin reactions there is a possible error since false positives have not been recognized. On the other hand there are patients who are still suspected of having the disease in spite of negative skin tests.

Any physician who has not recognized or who denies the existence of chronic undulant fever has, we believe, a surprise in store since many of our patients and one of us has had the experience of Alice Evans³ who states: "I shall draw from my own experience certain conclusions as to the diagnosis that the patient with the chronic form of the disease usually receives. I have been consulted by a number of patients with the chronic form of the disease who have been fortunate enough to receive, finally, the correct diagnosis. Usually there was a long delay before the correct diagnosis was given, and in the meantime the diagnosis was almost invariably neurasthenia. Indeed, the text book definition of neurasthenia describes brucellosis; exhaustion, insomnia, irritability, and the complaints of aches and pains for which no objective signs can be found."

ETIOLOGY

Undulant fever is caused by the *Brucella abortus* of which three strains are recognized; the *meletensis*, *bovine* and *porcine*. All known domestic animals are susceptible to the infection in varying degree⁵ and are capable of transmitting the disease to other animals and to man. In the United States the first cases were reported in the southwest, the infection apparently having been introduced by the importation of goats from abroad. Since 1927 cases have been

reported from every state and the number increases from year to year. The infection in this locality is thought to have been introduced about 1927 by way of cows found to be infected by the Wisconsin authorities and exported to other states in which no quarantine laws then existed. Herzog,¹⁶ however, states that the bacillus of Bang was recovered from aborting cows in Illinois prior to 1910 and a patient who is now under treatment reports that about 1895 almost all the cows in a herd under his care at the time aborted and were disposed of.

In this vicinity there are few goats and the infection can usually be traced to the patient's own herd or to a dairy supplying milk to the village. We have not recognized transmission from man to man. Most of the patients with the acute type of the disease have performed or assisted in the manual removal of a retained placenta in a cow.

Reports⁴ of epidemics which have been thoroughly investigated all attribute these epidemics to the consumption of raw dairy products from a herd harboring the infection and these epidemics have stopped abruptly after the infected animals have been removed from production or proper sterilization of the milk has been instituted. In Iowa the hog is considered a frequent source of the infection, but in this locality while many hogs are produced for market no case has been traced to this animal. In Iowa, also, one writer states⁶ that in separating milk, the organisms are carried off with the cream. If this is true the cream and the butter made from it are potentially more dangerous to the consumer than the whole milk, and the popular belief in the purity of "fresh country butter" is a fallacy.

SYMPTOMS

Patients with the acute type of the disease have presented the usual symptoms of fever, loss of weight, splenic enlargement, and characteristic perspiration; all have had positive agglutinations. One patient, a girl six years old, had typical inflammatory rheumatism and the diagnosis was made only after finding an enlarged spleen.

In patients with the chronic form of the disease there may be the widest variation in symptoms.⁷ It should be emphasized that the symptoms are inconstant and may differ widely from time to time and that there may be periods during which the patient has no complaints. In

individuals with a high sensory threshold the subjective symptoms may be minimal or entirely absent. Ordinarily the symptoms are those of any chronic infection or intoxication. The usual complaints are nervousness, dyspepsia, lack of endurance, dyspnea on exertion, constipation (at times obstipation), headaches, arthritis and shifting rheumatoid pains. When arthritis and rheumatism are present the sedimentation rates have been normal or but very slightly increased. Less frequent symptoms have been chronic pharyngitis, weakness of the extra-ocular muscles, sterility, tenosynovitis, orchitis and adenitis. One case apparently began as a suppurative axillary adenitis. Abortion or threatened abortion has occurred in women. Peri-appendicitis was reported by the pathologist in two instances in which the symptoms and findings lead to appendectomy.

DIAGNOSIS

The diagnosis in patients with the acute type rarely offers much difficulty although at the onset of the illness the diagnosis is rarely undulant fever. Our initial diagnoses have been influenza, malaria, typhoid fever, pyelitis and rheumatic fever.

Chronic undulant fever should be considered as a possibility in any patient with symptoms of a chronic infection or intoxication in whom the history and examination do not disclose another obvious cause. When suspected the diagnosis may be confirmed^{9,12,14} by specific agglutination, skin test, blood culture, or the opsonophagocitic test.

The agglutination test is the most convenient and least reliable.⁸ It requires merely the sending of a small quantity of the patient's blood to a laboratory or, should the physician wish to perform the test himself, the materials are simple and relatively inexpensive. In our experience it is usually positive in the acute and rarely positive in the chronic cases. A negative agglutination means nothing.

The skin test is the best and most reliable for routine use. In the performance of this test we inject on the anterior surface of the forearm .05 to 0.1 cc. of the stock vaccine, full strength or diluted, or of brucellergin. The results should not be read before 48 hours have elapsed in order to avoid false positives. Frequently the reaction will not appear until 42 or more hours have elapsed and occasionally may require several

days to develop. When stock vaccine is used undiluted there will frequently be necrosis at the site of the injection and occasionally there will be a severe systemic reaction. These reactions are very annoying and are also quite convincing to an occasional skeptic.

Some months ago the National Drug Company prepared for us vaccines of the three strains in dilutions ranging from 200 million to 1,000 million per cc. With these as antigen we determined by trial and error that the bovine or porcine dilution containing from 600 to 800 million was the most satisfactory for routine use. Weaker preparations occasionally fail to induce the reaction and the stronger too often cause necrosis and constitutional reaction. There is little difference in the reactions elicited by the bovine and porcine strains but the meletensis frequently fails to react. Huddleson's brucellergin is satisfactory and has been used for a few tests. It does not cause necrosis but appears to be less sensitive. It has the slight disadvantage of being more expensive and somewhat more difficult to obtain.

A positive reaction is indicated by a papule ranging in size from about three mm. to several cm. in diameter with a surrounding area of erythema. The reaction will persist for several days and at times will be visible for two or three weeks. The size of the reaction does not appear to be an index of the severity of the infection but is dependent on an allergic state.

A negative reaction does not rule out brucellosis since several patients have had negative skin tests and at the same time had positive agglutinations and active symptoms. Harris¹⁵ has had the same experience.

Blood culture was resorted to in one instance in which the patient had typical symptoms and was known to have been exposed to the infection. The skin and agglutinations were negative as were two cultures.

The opsonic index should be determined when the skin test is positive to determine whether infection or immunity exists.¹² It is also used⁸ to measure the degree of immunity induced by the administration of specific antigen for treatment. This procedure has the disadvantage of requiring the services of an experienced technician and requires the maintenance of a culture of brucella of known antigenicity and is not available to the average physician who does not

have a large laboratory available. Our own experience has been limited to two patients, both physicians.

TREATMENT

Treatment here has been uniformly unsuccessful in accomplishing complete and permanent cure. It has usually been possible, however, to modify the course and relieve the more distressing symptoms. In evaluating the efficiency of any treatment these patients should be observed for an extended period of time since it is well known that spontaneous remissions for long periods may occur. In one patient a quiescent period of four years was interrupted by a reaction following a skin test.

The first patients were treated by the usual drugs, dyes and biological preparations. Their benefit was problematical. One boy promptly became afebrile after the administration of a single dose of prontosil and has remained free from symptoms for a period of approximately fifteen months. He is, however, one of those rare patients with a high sensory threshold. Other patients with the chronic form of the disease have been given sulphanilamide by mouth for long periods without apparent benefit. Three patients received typhoid vaccine intravenously with questionable results. Reports on the use of intravenous typhoid therapy^{9,10} usually admit about fifty per cent. unsatisfactory results or else do not include a prolonged period of observation following the treatment. Vitamins B and C have been very useful in maintaining the nutrition and resistance of these patients and have at times given subjective improvement equal or superior to other forms of treatment.

Four or five years ago the stock vaccine was used in a few cases but was discontinued because of reactions and frequent relapses during and following cessation of treatment. Its use has now been resumed with reluctance. The first few doses almost always cause a reaction of varying severity. Many patients, especially women near or in the menopause, do not respond favorably and all patients who have received it and have been followed for any extended period have suffered recurrence of symptoms. It is entirely possible that our dosage or plan of administration has been incorrect⁸ although we have followed the plan of treatment given by those who have previously reported its use.

CLINICAL COURSE

Originally undulant fever was thought to be a self-limited disease, the usual course being about one hundred days and followed by complete recovery. While this idea is still held by some¹³ it is rapidly being abandoned and our own experience indicates that while the acute phase may run its course in that time, the chronic stage may have no end. The first patients, seen in 1931, were questioned recently and reported symptoms very suggestive of the chronic stage. Foshay⁸ states that he has seen many patients who have had the disease for as long as fifteen to twenty years.

RELATION TO PUBLIC HEALTH

As a statistical cause of death undulant fever is relatively unimportant, the reported mortality being less than one per cent. We have had no deaths. As a cause of morbidity, however, it is very important and, if one considers the prolonged period of lowered efficiency and the social disturbance which is part and parcel of the disease, the economic loss is enormous. We feel that it is a major public health problem and has received too little attention from the authorities and our legislators.

Since the consumption of raw milk or its products and the handling of infected animals is almost always the source of the disease its prevention lies in the elimination of infected animals or at least the proper pasteurization of milk. Routine, periodic examination of cows by the agglutination test does not appear to be sufficient since the infection in many of our patients has been traced to their own herds in which there was or had been clinical evidence of contagious abortion but negative agglutination tests. Our local veterinarian is of the opinion that a negative test is inconclusive and it is apparent that the test is no more reliable in animals than in man. A more reliable diagnostic test is needed for routine use and until it is found pasteurization of all milk will be the only effective preventive.

CASE REPORTS

The following cases have been selected as typical examples of chronic brucellosis or because of unusual features. The last⁸ is cited as a suspect in whom laboratory confirmation cannot be obtained.

1. J. H., farmer, aged 39 years. On Jan. 29, 1931, the patient became ill with symptoms leading to a

diagnosis of influenza. On Feb. 7 he was still febrile with a white blood count of 7500 and typhoid was suspected. Feb. 9 blood was sent to the state laboratory and on the 14th was reported positive for undulant fever in a dilution of one to 320. This was our first case and he received a quite varied treatment with indifferent results. In March, 1938, he reported that he had had no symptoms for the past two years.

2. E. D., schoolgirl, aged 16 years. This girl came to us in November, 1936, with a history of abdominal pain and flatulence of six weeks duration. The general physical examination was negative except for tenderness in the lower right quadrant of the abdomen, slight elevation of temperature and a white blood count of 14,000. She was observed for a time with no change in symptoms or findings. November 17 the appendix was removed and numerous adhesions were found about the cecum and appendix. She made a good recovery and was discharged on the tenth day. The pathologist reported "peri-appendicitis." A short time after returning home she began to have severe pains in the upper abdomen resembling tabetic pains. No explanation could be found for these pains; the general examination and laboratory work including skin tests for allergy were negative. She improved slowly during the winter and in April was examined at another clinic. No diagnosis was made. During the summer she had occasional recurrences of the symptoms. She was reported by an ophthalmologist to have increasing strabismus. In November she returned with recurrence of the abdominal pains and reported a loss of five pounds in weight. The agglutination for undulant fever was negative but the skin test was moderately positive. She took sulphanilamide for two weeks with no improvement. On vitamins B and C she improved rapidly and regained her weight. In January 1938 the ophthalmologist reported that the strabismus had improved. She returned in March with a complaint of headaches of four weeks duration. The general examination was negative. The abdominal and pharyngeal reflexes were absent and the deep tendon reflexes were increased. Encephalitis was suspected and she was hospitalized and given intravenous typhoid treatment. There was no definite improvement after five doses. Following her discharge from the hospital stock undulant fever vaccine was administered twice weekly for four weeks. At the end of this period there was an exacerbation of symptoms and the vaccine was discontinued. Vitamin therapy was resumed.

3. R. F., farmer, aged 42 years. This man was examined in March, 1938. His complaint was pain in the lower right abdomen recurring at intervals of about three or four weeks and lasting from four to seven days. His appendix had been removed twelve years previously. The pains were suggestive of partial intestinal obstruction. The general physical examination and routine laboratory tests were negative. The roentgenologist reported irritability of the duodenum and upper jejunum but no evidence of obstruction. A skin test was strongly positive and the agglutination was positive one to 160. He was advised to take yeast tablets and has reported relief of symptoms.

4. C. B., barber, aged 37 years. In April, 1934, this patient had attacks of syncope and cardiac palpitation. Temperature observations were normal. The blood pressure was 150/80. In June chronically infected tonsils were removed. The symptoms persisted for about four months after the removal of the tonsils after which there was gradual improvement. He was well until April, 1938, when there was a recurrence of the same symptoms. A skin test was moderately positive and induced a mild systemic reaction. The symptoms have disappeared under vaccine therapy.

5. Mrs. J. W., housewife, aged 53 years. In February, 1938, this patient appeared with arthritis in the right knee. No foci of infection could be found. The sedimentation rate was five mm. in one hour. Salicylates, diathermy and mapharsen gave no relief. On March 9 a skin test was strongly positive and induced a severe general and focal reaction. She has improved rapidly on vaccine.

6. Mrs. C. H., housewife, aged 53 years. This patient consulted us in March, 1935. Her complaints were headaches, neuritis, palpitation and dyspnea on moderate exertion. She had had a thyroidectomy seven years previously. The routine physical and laboratory examinations were negative. A diagnosis of menopause and coronary sclerosis was made. A year later she had an attack of abdominal pain diagnosed mild biliary colic. In September, 1936, a cholecystogram showed cholelithiasis and an electrocardiogram was interpreted as suggesting coronary sclerosis. In December the gall bladder was removed. During the following twelve months there was no improvement. In March, 1938, a skin test with 0.1 cc. of the 800 million bovine vaccine caused a severe systemic reaction with necrosis at the site of the injection. Two weeks later 0.05 cc. of the stock vaccine caused chills and fever which persisted for three weeks. An intradermal test with "brucellin" caused chills and fever for four days. She is receiving no specific therapy.

7. Mrs. M. B., housewife, aged 32 years. In 1935 this patient had a spontaneous abortion at three months. The abortion was incomplete and curettage was necessary. The Kahn test and agglutination for undulant fever were negative. In 1936 she delivered normally a full term baby. She is now eight months pregnant and recently a skin test was moderately positive and induced a mild systemic reaction. There are no symptoms and she is receiving only prenatal treatment.

8. Mrs. F. G., housewife, aged 40 years. This patient has been under observation and treatment for several years for a variety of complaints, chiefly vasomotor, nervous and gastrointestinal. She is undernourished, extremely constipated and has poor muscle tone. No definite organic disease has ever been found and all laboratory tests, including the skin and agglutination tests for undulant fever, have been negative. The Weltmann serum coagulation shows a slight shift. Undulant fever vaccine induces a severe constitutional reaction but no improvement. She is suspected of having chronic brucellosis.

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THE HYPERTENSIVE HEART

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The fact that heart failure in one form or another is the dominating factor in sixty out of every hundred deaths from the effect of hypertensive disease, emphasizes the significant role the heart plays in the prognosis and treatment of this most prevalent disorder.

The dual factors responsible for the high incidence of cardiac morbidity in hypertension are prolonged functional overstrain and nutritional impairment of the myocardium from the inroads of advancing coronary sclerosis.

The presymptomatic stage of hypertensive heart disease usually evolves slowly and insidiously during the decade or two following the onset of an established hypertensive state. During this period the heart gradually hypertrophies. When we realize that every hypertrophied heart is pathologic, already on its way to eventual failure, we cannot but conclude that we are dealing with potential heart disease in all frankly established hypertensive states. The problem is one of staving off or postponing the ultimate issue even

though actual prevention may lie beyond hope of achievement. Barring unrelated causes of death, approximately 60 per cent of hypertensive subjects develop terminal myocardial insufficiency, angina or coronary occlusion. Cerebral thrombosis or hemorrhage close the picture in about 30 per cent. and uremia in less than ten per cent.

EARLY WARNINGS OF IMPENDING CARDIAC BREAKDOWN

As long as the heart is able to meet the demands of an increased blood pressure there will be no symptoms in hypertensive disease. As the cardiac reserve lowers from the fatigue of years of overeffort from propelling blood at increased pressure through narrowed channels, along with the impaired blood supply due to coronary sclerosis, the hypertensive patient begins to experience one of two cardiac syndromes, the anginal or the myocardial. Some may experience vague effort pains or substernal discomfort that progress on to frank anginal or coronary occlusive attacks. More frequently encountered is the myocardial syndrome, with a history of progressive effort dyspnea, edema and congestive symptoms. The clinical picture of the typical anginal or myocardial syndrome is too generally recognized to warrant discussion. On the other hand, the very early expressions of cardiac disability, largely subjective and often obscure in nature, are not infrequently overlooked or misconstrued. The importance of a comprehensive and analytical history in potential cardiac subjects cannot be overemphasized.

1. Management of the Patient Before Signs and Symptoms of Cardiac Breakdown.

Tactful adjustment of the patient's physical and mental activity to within limits of his cardiac capacity; avoidance of stress and strain; insistence upon adequate rest, studied relaxation and quiet recreation; encouragement of an optimistic attitude; attention to the size of meals as well as to their type, and the avoidance of physical exertion after eating, are all important measures. Sedatives for the hypertensive and emotionally unstable are often essential. The control of obesity or other metabolic disorders such as thyroid and diabetic states often helps materially to forestall and delay the ultimate tragic sequelae of hypertensive heart disease.

Since hypercholesteremia does not occur in

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uncomplicated hypertension the routine employment of a low fat diet is probably unjustified, unless there be an accompanying obesity or diabetic tendency present. Under such circumstances, however, the present day concept of the pathogenesis of coronary atheromatosis with the subintimal deposition of cholesterol that takes place, would warrant adherence to a low fat regime in the obese or diabetic hypertensive subject, since the relationship of the hypercholesteremia of diabetes to atheromatous changes in the coronary and leg arteries is now recognized.

2. Treatment After the Development of Cardiac Failure.

Myocardial insufficiency in a hypertensive heart may develop slowly and progressively, from mild symptoms of heart muscle fatigue and lowered reserve on to frank congestive failure. The fact that hypertension brings about an hypertrophy of the left ventricle, through years of functional overstrain, makes for the appearance of primary symptoms of failure of that particular cardiac structure. In most cases this left ventricular failure manifests itself gradually with effort dyspnea, cough and lowered vital capacity. Not infrequently we encounter a more dramatic onset, with a syndrome of acute left ventricular failure, i. e., paroxysms of dyspnea, frequently nocturnal, called "cardiac asthma." The clinical picture here shows a characteristically frightened, air hungry individual, perhaps with a wheezing respiration, showing a bluish pallor and usually having coarse rales at the pulmonary bases. These symptoms are caused by a rapid sudden congestion of the lungs which may progress to dangerous pulmonary edema, from the acute left ventricular failure. The treatment consists in propping the patient up in bed or in a chair, prompt and adequate morphine perhaps intravenously with the precautions mentioned in a recent report before the American Therapeutic Society,¹ aminophyllin intravenously (strikingly effective particularly when used in conjunction with 50 cc. of 50% glucose intravenously), oxygen when available and occasionally venesection (400 to 500 cc.) when the above-mentioned measures have failed to give prompt relief. Venesection may be a life-saving measure in a severe protracted attack. The use of coramin or caffein intravenously is the best measure for the occasional respiratory center depression, following the use of the amount of

morphine sometimes necessary to bring about relief.

The immediate prognosis of an attack of acute paroxysmal dyspnea is good, but the ultimate outlook is rather bad, as the average case does not live longer than two years, following the onset of this expression of acute left ventricular failure. There are numerous incidences, however, in which this relatively short life expectancy is increased by many years. I have had in the past year two cases under observation in which attacks of cardiac asthma associated with a severe type of hypertensive disease have not recurred following lumbar sympathectomy (done to control the destructive progress of an advancing malignant hypertensive disease).

Chronic left ventricular failure is gradually followed by an accompanying right-sided failure with the typical effects of increased venous pressure, chronic passive congestion and edema. Curiously enough the patient who begins to evidence right-sided failure often feels more comfortable after this development takes place, because the blood is shunted from the lungs to the liver.

With the development of myocardial insufficiency, the paramount indication is for a period of bed rest, with adequate provision made for promoting relaxation, mental quietude and sleep, when the indication for narcotics has passed. The best narcotic is morphine. Barbiturates alone are usually useless, and not infrequently produce an undesirable mental reaction in the hypertensive sclerotic individual. After the necessity for parenteral morphine has passed, the use of 30 minims of one per cent morphine sulphate, along with chloral if necessary, is a good combination to use. Rest, in a case of myocardial insufficiency means rest, both physical and mental. Conversation must be minimized and visitors strictly limited. This obvious injunction is not infrequently overlooked. Bathroom privileges must be denied during the early period of recovery and overenthusiastic catharsis avoided. With the very effective present day xanthine and mercurial diuretics, there is no longer any indication for attempting fluid elimination by inducing copious bowel movements in the treatment of cardiac edema. In addition to a salt free diet and strict fluid limitation (800 to 1200 cc.), the use of a diuretic salt in conjunction with salyrgan or mercupurin have proven their usefulness. In place of ammonium chloride and ammonium ni-

trate we are now using potassium nitrate, 10 to 12 grams per day (20 to 24 one-half gram enteric coated tablets), or in the more nervous individuals the use of ammonium bromide, 4 grams per day, is particularly effective. These preparations should be given for two days before the injection of mercupurin or salyrgan and stopped after the injection and again re-continued two days before the next mercupurin. The initial dose of mercupurin is $\frac{1}{2}$ cc. intravenously, which is increased by $\frac{1}{2}$ cc. until 2 or even 3 cc. has been given, at intervals of about three days. Effective diuresis may not be noted until after the third injection, so the failure of the first one or two to give results should not discourage further use of the measure. The combination of decholin, 5 to 10 cc. along with 1 cc. of mercupurin will sometimes render a previously ineffective mercupurin injection far more productive of results, as decholin has a positive effect upon the hepatic circulation.

Digitalis in its full therapeutic expression is of course indicated, just as in any form of congestive failure. In the presence of portal congestion it is unwise to rely upon gastrointestinal absorption of the drug, which should be given intramuscularly or per rectum for the first two or three days, bearing in mind that it takes about the same amount of digitalis to be effective by this method as it does by mouth.

The total fluid intake (in the forme of milk and dextrose lemonade) should be restricted to around one litre per day until edema lessens. Then we may advantageously employ a generous carbohydrate, low fat and low roughage diet with a day of fluid restriction, and nothing but cooked fruit one day a week. As recovery proceeds we should remember that a high carbohydrate diet, fortified with a liberal amount of dextrose, is helpful in restoring myocardial efficiency. As compensation improves, there is often more indication for generous protein allowance than for protein restriction, for a low plasma protein content, so often occasioned by prolonged albuminuria and unwise protein dietary restriction, may actually encourage and perpetuate edema. We must recall again that present day knowledge does not justify protein restriction in hypertensive disease. A weakening myocardium may be neglected or given secondary place because the combination of dropsy, hypertension and an albuminous urine are misconstrued as indicating a

primary nephritis instead of being recognized as the result of chronic passive congestion from an insidiously developing myocardial failure in a hypertensive subject.

The average hypertensive patient has no inability to utilize protein and attempts at restriction are not only unnecessary but may do actual harm. There is no reliable clinical or experimental evidence that a normal amount of protein has any influence on the blood pressure level or kidney function in hypertensive disease. Patients live longer and are more vigorous with a moderately high protein diet, because they are less likely to become anemic or take on weight, and tend to maintain better tissue tone.

Let us again recall that atherosclerosis of the larger coronary vessels are frequently associated with hypertensive heart disease, which aside from handicapping the nutrition of the myocardium, may at any time dominate the clinical picture with attacks of angina pectoris or coronary occlusion, each of which presents a specific therapeutic problem wholly independent of the associated hypertensive disease.

In conclusion, let us bear in mind that even though we cannot always in a severe case greatly enhance the heart's assets, we should at least strive to minimize its liabilities by our management of the patient's mode of living. This naturally constitutes an individual problem to be dealt with intelligently, patiently and kindly, with a high note of reassurance and encouragement, remembering that nature is after all the great healer and all our efforts are merely an attempt to enhance her healing power.

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THE PATIENT AND THE WEATHER

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As you see, the title of my paper is the one given by William F. Petersen to books he has written and in which are contained in most painful detail voluminous data which he has gathered from years of accurate observation covering the most diverse clinical entities of disease. The author stresses mostly in his meteorographs the

Read before the McDonagh Society for Clinical Research, April meeting.

inverse ratio existing between temperature and barometric readings with their effects on polar or tropical fronts, which again he associates with the A. R. S. and C. O. D. phases.

The effect of the A. R. S. phase on the tissues shows preponderance of anabolism, cellular reduction with increasing acidity and permeability, as well as systolic blood pressure due to spasm of peripheral and end arteries. The blood in this phase shows decreased CO_2 content and increased pH and K/ca ratio with decrease of cholesterol A. R. S. (Anabolism, Reduction, Spasm).

The C. O. D. phase shows in the tissues a catabolic preponderance with increased oxidation, decreased acidity, and permeability; also a decreased diastolic blood pressure (dilatation). The blood in this phase shows increased CO_2 content, decreased pH and K/ca ratio with increase in cholesterol. C. O. D. is Catabolism, Oxidation, Dilatation.

Dr. Petersen, narrating a typical case of migraine, has the following notes: "The pH fluctuates within a range of 20 points and the CO_2 varies 25 volumes per cent, a fluctuation that is pronounced in the period free from migraine as well as during the attacks. During freedom from attacks the pH varies from 7.37 to 7.51 and the CO_2 from 54 to 78 volumes per cent. although the majority of values fall within normal limits (Van Slyke). The lowest pH and highest CO_2 usually occur just before an attack. The acid-base balance at these times tends towards an uncompensated CO_2 excess, a gaseous acidosis and the ratio $(\text{HCO}_3)/(\text{BHCO}_3)$ is higher."

"With the commencement of the attack of headache, the pH shifts to a higher level while the CO_2 content is relatively low. The acid-base balance tends therefore toward an uncompensated CO_2 deficit, the ratio $(\text{H}_2\text{CO}_3)/(\text{BHCO}_3)$ being lower at these times. The period of maximum distress is usually associated with the period of highest pH and lowest (H_2CO_3) content."

"In short, the acute migraine attack is associated with

1. An increase in the blood pH
2. Lowering of the CO_2 content
3. Increase in blood pressure
4. Lowering of blood protein."

All the above are easily recognized as the hydra-

tion described by McDonagh as well as the A. R. S. phase of Petersen.

In the McDonagh terminology consequently the A. R. S. phase represents Hydration of the serum protein particles, whereas the C. O. D. phase is analogous to the Dehydration of the above particles. In order to better appreciate the intricacy of the above works, one would do well to read a recently published book entitled "Meteoropathologie" by G. Mouriquand and P. Josserand of Lyon, France.

These authors in a most conservative way review data obtained in the last forty years through observation of French physicians. They study

1. Syndromes related to thermal variations (heat and cold)
2. Syndromes related to barometric variations
3. Syndromes related to hygrometric variations
4. Syndromes related to variations in the intensity of solar rays
5. Syndromes related to variations in the atmospheric electricity,

and conclude that in reality none of the above meteorological findings are pure, for thermal variations are most often accompanied by those of the barometric, hygrometric and electrical incidental factors; therefore there must of necessity by a meteorological complex governed by an "undetermined factor." Mouriquand is of the impression that without being able to establish the existence of syndromes directly related to the hygrometric variations and playing an exclusive role, nevertheless they seem to him to be a preponderant factor, the excessive humidity or dryness of the air being pathogenic for many recorded cases.

Kopaczewski would blame the electrification and ionization of the water droplets, whereas Trillot has shown in atmospheric humidity the presence of foci of microbial cultures suspended in the air and being the cause of epidemic infections.

Especially in large cities air pollution and toxic agents are imprisoned in a fog, such as toxic gases from nitrogen, sulphur and carbon oxides, phenols, hydrocarbons, etc. Paris receives each year in its atmosphere 13,000 tons of benzol and 27,000 tons of heavy oils. The most noxious are the sulphur gases and CO .

In suburban Chicago Henderson and Haggard have found five milligrams of SO_2 per cubic meter, whereas in the city itself the amount rises to 62 milligrams per cubic meter.

One recalls the toxic fog of Liege, reported by Firket, which proved to be SO_2 derived from industrial centers in the neighborhood, the result of which caused the deaths of many children.

Professor Dessauer concludes that there is present in the atmosphere at least one other physical factor in addition to such other factors as pressure, temperature, radiation and humidity. He, as well as others, has suggested that this factor is the ion content of the air, and that although there is no simple direct relation between the magnitude of the ion content of air and the reactions of people, there are a few scattered observations which indicate that the ion content of the air exerts some influence upon human health.

According to J. L. Pech we are ignorant of the source of the atmospheric ionic field, but we do know that it varies in inverse ratio with the air conductivity and therefore any influence which affects this conductivity brings about variations in the electric ionizations of the air. Daunderer considers the electrical respiration of the soil through its radio-activity which varies in diurnal fashion according to the barometric pressure and gives a constant in different parts of the country, depending upon the geological formation of the soil and subsoil, thereby regulating the electrical status of the local atmosphere.

If one compares the ionometric measurements of the air to other meteorological factors, there is a discrepancy in noting that it is often quite independent of such factors and that its conductivity is variable but may be able to influence nutrition. Lewis R. Koller, in his studies of ionization of the atmosphere, noticed that in most cases positive ions produced feelings of fatigue, dizziness, headaches, roaring in the ears, nausea, etc., in a greater or lesser degree; negative ions in most cases produced a feeling of exhilaration. He also found that if normal individuals inhale air with a high concentration of negative ions from one-half to one hour, the blood pressure is lowered from five to 15 mm.; soon after stopping the inhalation the pressure returns to its normal value.

The effect of positive ions is to increase the blood pressure slightly, but it tends to produce headaches and discomfort. On respiration Happel and Denier found that positively charged ions increase the rate of respiration, while in the case of negative ions patients breathe more

quietly with frequent pauses in respiration. There also appears to be an increase in oxygen consumption under the influence of positive ions.

Dessauer, in a study of 200 cases of patients with high blood pressure, found a permanent improvement under inhalation of negative ions in 80 per cent. of cases, also improvement in rheumatism, gout, neuritis, and neuralgia, acute and chronic bronchitis, cardiac and bronchial asthma, heart and arterial disease. In general, he states that the inhalation of the same negative ions affects the condition in much the same way as mountain climate. Falling barometric pressure, which generally affects the condition adversely, tends to withdraw air from the soil. This air usually has a high positive ion content due to adsorption phenomena. The Fohn wind, experienced in the Alps, which also produces discomfort, also has a high positive ion content.

Laporte concluded that the negative ions in air and oxygen are the same; that is, they are oxygen ions, due to the fact that the election affinity of oxygen is must greater than that of nitrogen.

Fifty per cent. of the volume of the soil is air. This air becomes highly ionized by the small amount of radio-active matter which is present in the soil. Due to changes in temperature and barometric pressure and the action of winds this ionized air is drawn out of the pores of the soil. In its passage through the capillaries there is a selective adsorption of negative ions which leaves the escaping air with a slight excess of positive charge.

These presumptions have influenced Moriquand to stress "le vent du Midi," Storm van Leeuwen, Booy van Nickerk, Czermak and Petchacher the "Fohn syndrome;" Dr. Colombani in North Africa "the sirocco," and Morquio of Montevideo, Annes Dias of Rio De Janeiro the North Wind from the equator affecting South America. As we see, all these winds are hot winds originating from the equator. Peterson quotes Hippocrates in "The Sacred Disease," "And for these reasons, I say, they are attacked during changes of the winds, and especially south winds, then also with north winds, and afterwards also with the others. These are the strongest winds, and the most opposed to one another, both as to direction and power. For, the north wind condenses the air, and separates from it whatever is muddy and nebulous, and renders it clearer

and brighter, and so in like manner also, all the winds which arise from the sea and other waters; for they extract the humidity and nebulosity from all objects, and from men themselves, and therefore it (the north wind) is the most wholesome of the winds. But the effects of the south are the very reverse.¹ For in the first place it begins by melting and diffusing the condensed air, and therefore it does not blow strong at first, but is gentle at the commencement, because it is not able at once to overcome the dense and compacted air, which yet in a while it dissolves. It produces the same effects upon the land, the sea, the rivers, the fountains, the wells, and on every production which contains humidity, and this, there is in all things, some more, some less. For all these feel the effects of this wind, and from clear they become cloudy, from cold, hot; from dry, moist: and whatever earthen vessels are placed upon the ground, filled with wine or any other fluid, are effected with the south wind and undergo a change. And the sun, the moon, and the stars it renders blunter in appearance than they naturally are. When, then, it possesses such powers over things so great and strong, and the body is made to feel and undergo changes in the changes of the winds, it necessarily follows that the brain should be dissolved and overpowered with moisture, and that the veins should become more relaxed by the south winds, and that by the north the healthiest portion of the brain should become contracted, while the most morbid and humid is secreted, and overflows externally, and that catarrhs should thus take place in the changes of these winds. Thus is this disease formed and prevails from those things which enter into and go out of the body, and it is not more difficult to understand or cure than the others, neither is it more divine than other diseases."

Mouriquand lays great stress on three factors which may affect the air ionization. Without mentioning either the positive ions released from the soil or those possibly derived from cosmic rays, as advocated by McDonagh, these factors mostly concern a wind from the south, a drop in the hygrometer and an elevation of temperature, with a concomitant low barometric reading.

According to the above author the minimum of humidity (30 to 40 per cent.) occurs around

two o'clock in the afternoon, whereas the nocturnal elevation attains 90 per cent. These readings are quite constant the year around. Should, however, a south wind prevail, the nocturnal high hygrometric reading does not obtain and ionometric disturbances occur, with their dire influence upon the human, animal and vegetable organism. The moment a north wind succeeds the south wind all symptoms disappear spontaneously.

Maurice Faure sees a relation between atmospheric ions and the sun spots.

Considering all the above data Pech considers that the electrical status of the atmosphere plays the greatest role in climatology. Other authors sharing the same opinion are Piery, Boudouin, Laignel-Lavastine, and Joly. However, most authors, while admitting that such influences affect the living organism, grant that the meteorostabile or labile individual is influenced through its internal medium of body resistance and that the unstable individual, especially amongst children, is the most vulnerable to meteoropathology.

From the above conclusions the Mouriquand "undetermined factor" seems to be related to some electric or ionic entity changing the normal environment of the biological organism, be it vegetable, animal, or human, and in order to counteract the adverse influences of the above, the physician must strive to stabilize the chemistry of the individual in order that the disturbing environment is overcome through the natural buffer action of the cellular biochemic defense, which resides mostly in the proper balance of the normal constitution.

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The first distinctly American disease appeared in 1906 after the San Francisco earthquake. The disease was named Tularemia in 1912 by Dr. Edward Francis after the county of Tulare, California, in which the discovery was made that the disease was transmitted by squirrels. —Howard W. Haggard.

1. Sirocco.

ROCKY MOUNTAIN SPOTTED FEVER IN ILLINOIS

(A Report of Two Cases)

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Because of the fact that the average general practitioner in the midwest has never had the opportunity of seeing a case of Rocky Mountain spotted fever, and because it seems to be becoming endemic here, the following two cases are presented.

Case 1. Elizabeth K., female, aged 3 yrs., 9 mo., oldest of three children with negative personal and family history, had been staying in the nearby country home of an aunt for 12 days while a new arrival was being adapted to the family circle at home.

April 29, Friday afternoon, her aunt noticed that the child seemed listless and not feeling well. There was some chilliness, but no chill. She was removed to her home.

April 30. I was called in the afternoon, about 30 hours after the apparent onset. The physical examination, except for a fever of 105° F. by rectum and a spotted macular eruption scattered over the entire body, was negative. The child had vomited in the morning following an administration of a laxative by the parents, but not otherwise. The paucity of symptoms outside of the fever and the eruption was the notable thing. Appearance of the eruption in absence of other findings suggested to me that she might possibly have a severe case of chicken pox which had not yet developed vesicles. This suspicion was dispelled when on the next morning no vesicles were present.

May 1. The eruption had become much more prevalent, macular in appearance and, while not confluent, it on this day suggested measles. But no catarrhal symptoms were present. The temperature in the a. m. was 102° F., and in the p. m. was 105° F.

May 2, the fourth day of the disease. The disease continued the same. The fever ran from 104° F. to 105.8° F. The bowels moved freely on this and on the following days. The movements were foul-smelling. The eruption was now petechial in character and very profuse, covering the entire body. Meningococcic toxemia was considered and blood was withdrawn and cultured with negative results.

May 3, 4, 5. The disease continued the same course. Typhus fever and spotted fever were considered.

May 6. The child was removed to the St. Francis Hospital in Peoria, where she was paced under the care of Dr. Orville Barbour, pediatrician, who cared for her in cooperation with Dr. S. Horwitz of the State Department of Public Health. A spinal puncture was done. The findings were negative. Cell count 7, and no organisms. The blood count was as follows: Hemoglobin 90%, R.B.C. 4,500,000, W.B.C. 11,500, Segs. 78, lymph. 14, staff. 5, monos. 3. There was considerable swelling of the lower extremities, face, and eyes, marked hyperesthesia of the skin, general

neuritis. At the slightest touch on any part of the body, the child had a crying spell. On the evening of this day, May 6, the child became cyanotic and was extremely dehydrated. Blood was withdrawn for a Weil-Felix agglutination test for Rocky Mountain spotted fever. This test, performed at Springfield, proved to be negative. However the clinical picture confirmed the diagnosis in our minds of a Rocky Mountain spotted fever. In the second case, which follows, the test was positive.

May 7, the eighth day of the disease. The child died.

Following are the results of the postmortem performed by Dr. Milton Bohrod:

External: The body is that of a well-developed and well-nourished white girl three years of age. The lower extremities show a marked degree of rigor mortis. It is not so marked in the upper extremities. Distributed over the entire skin surface, but most numerous about the face and extremities, there are innumerable, discrete hemorrhagic areas varying from pin-point to 3mm. in diameter. Over the lower extremities there are a few large purpuric areas about 2 cm. in diameter. The neck, shoulders, and ears show mottled cyanosis.

Abdominal Cavity: The liver is above the costal margin. The tip of the spleen is at the costal margin. The peritoneum is smooth and glistening, and shows no petechial hemorrhages.

Thoracic Cavity: The pleural spaces are free from fluid and adhesions. Both lungs are partially collapsed. The heart is centrally placed and of usual dimensions. The pericardial sac contains a small amount of clear fluid; its lining is smooth and glistening. On the epicardium a few small pin-point petechial hemorrhages can be seen.

Heart: The myocardium is pale but firm. The left ventricle is 10 mm., the right ventricle is 3 mm. thick. All the valves are intact. The foramen ovale is closed. The heart weighs 80 gm.

Lungs: The lungs are firm and fleshy. There is no evidence of consolidation.

Spleen: The spleen is large, the capsule is tense. The parenchyma is exceedingly soft and mushy. The malpighian corpuscles stand out prominently. The spleen is 10.5 x 6 x 3.7 cm. and weighs 125 gm.

Liver: The edge of the liver is moderately rounded. The parenchyma bulges on section and is unusually yellow. Only toward the periphery can the lobular markings be made out. The gall-bladder is tense and filled with green viscid bile. The mucosa is intact. The liver weighs 580 gm.

Adrenals: The adrenals are small. The cortex shows a very small amount of lipid.

Kidneys: The right kidney is 8 x 4.6 x 3.2 cm. The parenchyma is pale. The cortex is poorly demarcated from the medulla. The capsule strips easily revealing a smooth surface on which the fetal lobulations are still apparent. The left kidney is like the right. Both kidneys together weigh 120 gm.

Internal Genitalia: The uterus is infantile. The ovaries are small and contain no cysts.

Urinary Bladder: The urinary bladder is contracted. The mucosa is pale except for a few small petechial hemorrhages.

Gastrointestinal Tract: The esophagus is smooth. The stomach is somewhat dilated and the rugae are flattened out. The mucosa shows no petechial hemorrhages. The remainder of the gastrointestinal tract shows nothing unusual.

Brain: The leptomeninges contain a slightly increased amount of fluid. The cerebral vessels are somewhat injected. The surface shows no petechial hemorrhages. The hypophysis is of normal size.

Case 2. A married woman, 21 years of age with baby aged ten months; of slender build and with no history of previous disease of significance; she was the aunt of the child previously described, and it was in her home that she had been staying.

May 14. The patient presented herself in my office because of spots on arms and legs. Stated that on the afternoon of May 12 she had felt chilly and had thought she might be taking cold. On May 13 she did not feel well. Her face was slightly swollen, eyes reddened, and she was dizzy. She undoubtedly had some fever. Physical examination today showed a highly nervous individual, fever 101° F., pulse 90, face slightly swollen, eyes slightly injected, and a spotted rash, macular in character, scattered over her limbs and less prevalent on the body. The heart, lungs, and abdomen negative. Seen at her home that evening, the temperature was 102° F., the rash was more prevalent. Otherwise she was about the same.

May 15. The fever ranged from 100° F. to 102° F. The rash was becoming more prevalent over the body. The patient was seen today by Dr. Horwitz of the State Department of Public Health. Blood was taken and sent to laboratory for a culture. This proved to be negative for any organism. Hospitalization was urged, but was refused even after cooperation of county authorities to finance same was secured. At this time the patient was given sulfanilimide, five grains every two hours with soda bicarbonate.

May 16, 17, 18. The patient's condition continued about the same. She did not feel particularly ill, but was very nervous. The bowels were loose and the stools were foul. The tongue was coated. She had some headache.

May 19. There seemed to be a great many more spots over the entire body. The fever ranged from 102° F. to 103° F., and the pulse 100 to 122.

May 20. Her condition was about the same. The urine contained 1-plus albumin. The patient was nauseated.

May 21, the 8th day of the disease. The temperature stayed around 103° F. The pulse had increased to 130 and the spleen was palpable. The rash now so covered the entire body that one could not place a fingertip on the body without touching at least three or four spots, which were becoming petechial. Muscle soreness was becoming marked. As the sulfanilimide seemed to be having no effect, it was discontinued.

May 23. The patient was cyanotic, and delirious at

times. The fever was 104° F., the pulse was 132. Digitalis and whisky were given.

May 24. The patient's condition was about the same. On this day my partner, Dr. T. C. Coggeshall, suggested metaphen, and 10 cc. of the 1 to 1000 solution was given intravenously. The patient seemed desperately ill.

May 25. The fever was lower and the pulse was around 120. The metaphen was repeated. The tongue was moist. The bowels were loose and sweating was profuse.

May 26. The fever ranged from 102° F. to 103.6° F. and the pulse from 116 to 126. There was a marked tremor of the hands and convulsive twitching of the muscles of the face in her sleep. Photophobia was marked. The bowels were loose. The stools were acid in character. The urine contained no albumin or sugar and the p. h. was 6.5.

May 27. The fever was 104° F. and the pulse 128 to 136. She was very restless, delirious, and sweating. The throat seemed injected and the spots were dusky in appearance. Another 10 cc. of metaphen was given intravenously.

May 28. Her condition showed a decided improvement. The fever was 101° F. in the a. m., and 99.8° F. in the p. m. The condition of the bowels was better. Sweatings continued and there was profuse salivation. The photophobia was better.

May 29. The temperature and the pulse were both increased, and another 10 cc. ampule of metaphen was given.

May 30. The patient was better, with a normal a. m. temperature.

May 31. The fever was again higher, and a mitral systolic murmur was audible.

June 1. Another ampule of metaphen was given, and from this time on, the improvement was rapid. On June 4, the 24th day of the disease, the temperature was normal all day and has remained so.

On examination two weeks and four weeks later, the rash of spots, although greatly faded, is still distinct, especially on the extremities. A systolic murmur over the apex still persists. Convalescence seems slow. Hemoglobin 70%, talquist.

Laboratory tests which proved negative in this case were the Kahn, Widal, typhoid, and paratyphoid A and B. The Weil-Felix reaction for Rocky Mountain spotted fever, performed under the direction of L. E. Orr, M. D., of the State Department of Public Health, was positive in dilution 1—680.

Comment: Rocky Mountain spotted fever is transmitted through the bite of infected ticks. The source of infection in these two cases is problematical; in neither case was a history of tick bite obtained. It is known, however, that a few months previously three dead feeder sheep were thrown from a truck into a ravine a short distance from the house. It is exceedingly probable that these animals were tick infested. Some of these ticks may have infested the family dog

with which the child played and the aunt came in contact.

In treatment of both these cases, sulfanilimide was used with no benefit. In the second case, the solution of metaphen intravenously seemed to be of almost specific value, and it will be interesting to learn of the experience of others in using this preparation in treatment of this very serious disease.

SUMMARY

Two cases, one of suspected and one of proven Rocky Mountain spotted fever, are reported.

THE EVANSTON SOCIAL HYGIENE CLINIC

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With the aid of Federal funds made available through the Illinois State Department of Public Health for the expansion of local health services, the Social Hygiene Clinic conducted by the Evanston Department of Health was reopened on July 1, 1937, after having been closed for three years because of lack of funds. The City of Evanston provides the clinic quarters, which includes heat, light, telephone and janitor service; in addition, an appropriation somewhat larger than that provided from Federal funds is made by the Evanston Department of Health. This cooperative venereal disease control program is in line with similar programs throughout the country which have been established recently for more effective venereal disease control. The clinic quarters are located on the first floor of the building occupied by the Evanston Department of Health, thus providing opportunities for effective administration. The clinic has now been in operation for almost a year, and we felt that a presentation of the procedures followed in our clinic might be of value to other health officials throughout the State who are interested in clinics for venereal disease control.

A total of 505 persons presented themselves in our clinic during the past year, 80% of whom are negroes. Local physicians, hospitals and welfare organizations welcomed the opportunity to refer indigent persons having, or suspected of having, a venereal disease to the clinic for

examination and treatment. Checking of mates and other members of the families from which these persons came, and investigation of suspected sources of infection named by patients, provided the clinic with a constantly increasing patient load. As a general principle, it is our feeling that venereal diseases can be treated most satisfactorily in the office of a private physician, thereby eliminating to a large extent many of the difficult social problems which arise in a public venereal disease clinic. Accordingly, whenever we find that the patient can afford to do so, he is referred to a private physician for care. For the most part, however, our patients have come from the ranks of the unemployed or those in the lower income brackets, and thus are unable to obtain the services of a private physician.

Our clinic staff is composed of two Public Health nurses who devote their entire time to this work, and three physicians employed on a part-time basis, each of whom serves at two clinic sessions each week of two to three hours duration. The clinic personnel operates under the direction of the Commissioner of Health; three Evanston physicians serve as a Medical Advisory Board, and regular meetings are held with the clinic staff for the purpose of discussing clinic problems. In order to accommodate persons employed in varying shifts throughout the day, two clinic sessions are held in the morning, two in the afternoon and two in the evening, a total of six each week.

New Patients. We have found that admission of new patients to a busy therapeutic clinic session is not a wise procedure. Registration and examination of new patients is a laborious and time-consuming operation which upsets a smoothly working treatment session. Accordingly, we have set aside one clinic session exclusively for new patients. If the patient presents himself with obvious clinical symptoms and signs of venereal disease, a complete medical history is obtained and a thorough medical examination is given by the physician, which includes, in addition to smears for examination for gonococci and blood for a Kahn test, urinalysis, red and white blood cell counts and hemoglobin determination, before treatment is begun. By this means pathological conditions are discovered which might be aggravated by anti-venereal treatment, for which the clinic would be un-

justly blamed should complications arise. Patients with a history of exposure and without clinical symptoms of venereal disease are not given a complete medical examination on their first appearance. Smears and blood specimens are taken for laboratory examination, and if found to be positive the patient is given a medical examination the following week, and is assigned to a therapeutic clinic session for treatment. Limitation of new patients to a clinic session conducted exclusively for that purpose results in increased efficiency at the regular treatment clinics, and the new patient receives the time and attention from the clinic physicians and nurses to which he is entitled.

Icterus index determinations are made at four to six week intervals on patients receiving arsenical drugs, in order that early liver damage may be detected. In addition, routine urinalyses are made at three-week intervals on all patients receiving antiluetic therapy. All laboratory tests are made in our own laboratory, which is particularly satisfactory when the clinician desires an immediate report on the findings. Accessibility of laboratory facilities is also important in examining vaginal secretions for trichomonas vaginalis. A cooperative arrangement with the Evanston Hospital Out-Patient department has been effected, whereby special examinations are made when indicated, and visual field determinations and lumbar punctures are carried out.

Record Keeping. One of the glaring weaknesses in Venereal Disease Control Programs throughout this country in past years has been incomplete and inadequate keeping of records. Too frequently a complete medical history was not taken, and treatment was begun without a thorough medical examination. Little effort was made to locate sources of infection, or to check members of the family or other persons who had been exposed, with the result that the program to prevent spread of venereal diseases was relatively ineffective.

Accordingly, emphasis has been placed upon the necessity for keeping complete records in our clinic. The Clinic Case Record form supplied by the Illinois Department of Public Health is used. Progress notes and the record of treatment are always made by the clinician, and not by dictation by the clinician to one of the staff or nurses. All such notes are initialed by the

clinician. This procedure eliminates inaccuracies and misunderstandings in record keeping, and the clinician can make an intelligent interpretation of the patient's progress from time to time.

Treatment. The outline of treatment for syphilis recommended by the Cooperative Clinical Group of the U. S. P. H. S. is followed in our clinic. For gonorrhea, the Corbus-Ferry gonococcus filtrate is being employed in a selected group of cases in connection with a study which is being made on this product, the results of which will be reported later. Sulphanilamide is also employed in treatment of certain cases of gonorrhea. For the most part, the drugs used in our clinic are those supplied by the Illinois Department of Public Health, but special drugs are purchased by the Evanston Health Department when the need arises.

All injections are made by physicians, irrespective of the patient load during any particular clinic session. Under no circumstances are the nurses permitted to make injections of any sort. It is our firm conviction that administration of antiluetic drugs is the entire responsibility of a physician, and when nurses are permitted to do this work, they are required to assume responsibility which is not permitted by the ethics of the Medical and Nursing professions, or by the laws of the State of Illinois.

One afternoon clinic session is devoted to children of syphilitic parents. A pediatrician is in charge of this clinic, and the results being obtained are very satisfactory. During the first year of operation of the clinic, 61 children of luetic parentage have been examined in our clinic, of whom 18 were found to be syphilitic. Those whose blood tests were negative are kept under observation, and are reexamined and retested every six months. We consider this phase of our program to be one of the most important aspects of a good Venereal Disease Control Program. It is more important to prevent progression of syphilis in a child than to treat the chronic luetic in his sixties who has lived with a syphilitic infection for twenty years.

Lapsed Cases and Follow-Up. For the most part, the patients registered in our clinic attend sessions faithfully and follow instructions given by the physicians and nurses. However, if a patient does not appear for treatment for three consecutive weeks, he is considered to be a lapsed case and is contacted by a nurse and instructed

to return to the clinic for further treatment at once. Three per cent. of the patients in our clinic lapsed treatment according to the three-week standard set by us, and of these a small number were very delinquent in attendance. In handling these cases we found it most satisfactory to have them arrested and brought to court under the Illinois Statute requiring persons with an infectious venereal disease to submit to treatment. On appearance in court, the judge has passed a sentence of one year of incarceration, but the sentence is suspended and the patient is placed in charge of the Probation Officer of the Evanston Police Department for the purpose of checking clinic attendance. This procedure has served to stimulate regular clinic attendance in all but two cases of incorrigibles, who were sentenced to the Bridewell. Even though the patient might not have an infectious venereal disease at the time of appearance in court, the requirement that a cure must be effected before the patient is discharged is invoked by the court.

Statistical Analysis. The four tables submitted herewith present an analysis of our patient load according to disease, occupation, age, sex and color. Table 1 presents an analysis of the patient load according to disease, sex and color, and it will be noted that the majority of our patients are negroes. This preponderance of colored persons is no doubt due to their lower economic status as compared to the white man, which does not permit treatment by a private physician. Furthermore, the negro has for years been accustomed to attend free clinics for medical care, and he naturally turns to clinics such as our when he becomes ill. In comparison, the white man prefers the services of a private physician, and generally manages to avail himself of such care, frequently under very trying circumstances. The majority of luetics under treatment in our clinic have tertiary syphilis,

and we are not finding as much primary and secondary syphilis as we had anticipated. A proportionately larger number of females than males is receiving treatment for syphilis, while in the case of gonorrhea just the opposite is true.

TABLE 1. CLASSIFICATION OF PATIENTS ACCORDING TO DIAGNOSIS AT TIME OF REGISTRATION AT CLINIC FROM JULY 1, 1937 TO JUNE 30, 1938

Total number of patients examined.....	505
Total number of negroes examined.....	408
Total number of negroes with syphilis.....	215, or 53%
Total number of negroes with gonorrhea.....	39, or 10%
Total number of whites examined.....	97
Total number of whites with syphilis.....	36, or 37%
Total number of whites with gonorrhea.....	5, or 5%
Negro males with syphilis.....	91
Negro females with syphilis.....	124
Negro males with gonorrhea.....	25
Negro females with gonorrhea.....	14
White males with syphilis.....	15
White females with syphilis.....	21
White males with gonorrhea.....	2
White females with gonorrhea.....	3
Symptom-free children under observation because of Luetic Parentage—Male 30—Female 31.	

Type of Syphilis		
	Male	Female
Primary	2	0
Secondary	6	17
Tertiary	71	119
C. N. S.	11	1
Congenital	6	9
Total	96	146
Type of Gonorrhea		
	Male	Female
Acute	25	6
Chronic	11	16
Total	36	22

In Table 2 the patients are classified according to marital status, and it is of interest to note that the largest number of patients of both sexes under treatment for syphilis are married. In the case of gonorrhea the number of married persons under treatment is equal to those who are single.

In Table 3, it will be noted that the largest number of persons with syphilis come within the age range from 20 to 55 years. In contrast, the

TABLE 2. CLASSIFICATION OF PATIENTS ACCORDING TO MARITAL STATUS

	Syphilis		Gonorrhea		Negative		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
Single	33	38	16	4	55	75	104	117
Married	51	56	9	9	28	37	88	102
Widowed	7	20	0	0	5	5	12	25
Divorced	1	4	0	0	0	0	1	4
Separated	13	27	2	4	2	4	17	35
Total	105	145	27	17	90	121	222	283

largest number of patients with gonorrhea come within the 20-25 age grouping. Attention is directed to the age groupings of children under observation or receiving care in our clinic. A significantly larger number of females have

largest number of patients are female domestic servants, while several other types of servants are also represented. This is not an industrial community, therefore most of the negroes earn a living in this manner. In our educational pro-

TABLE 3. CLASSIFICATION OF PATIENTS BY AGE, SEX, AND COLOR

Age	Color	Syphilis		Gonorrhea		Negative		Total	
		Male	Female	Male	Female	Male	Female	Male	Female
Under 1 year of age.....	W.	..	..	..	..	1	..	1	..
	B.	2	2	..	..	4	3	6	5
1 to 4 years of age.....	W.	1	..	..	..	1	5	2	5
	B.	3	..	..	..	5	7	8	7
5 to 9 years of age.....	W.	..	..	..	..	..	5	..	5
	B.	3	3	..	1	8	7	11	11
10 to 14 years of age.....	W.	1	1	..	..	2	2	3	3
	B.	..	2	..	1	4	5	4	8
15 to 19 years of age.....	W.	..	2	1	..	3	4	4	6
	B.	5	6	2	1	7	12	14	19
20 to 24 years of age.....	W.	1	3	..	2	8	12	9	17
	B.	8	28	11	4	7	10	26	42
25 to 29 years of age.....	W.	..	1	1	..	2	..	3	1
	B.	13	18	5	4	6	7	24	29
30 to 34 years of age.....	W.	2	2	..	..	2	1	4	3
	B.	11	14	3	1	7	15	21	30
35 to 44 years of age.....	W.	3	4	..	1	2	2	5	7
	B.	18	32	3	2	12	9	33	43
45 to 54 years of age.....	W.	3	4	..	..	1	2	4	6
	B.	15	12	1	..	4	7	20	19
55 to 64 years of age.....	W.	2	3	..	..	1	1	3	4
	B.	7	5	..	..	1	4	8	9
65 to 74 years of age.....	W.	1	..	..	..	..	..	1	..
	B.	4	3	..	..	2	1	6	4
75 years and over.....	W.	1	..	..	..	..	..	1	..
	B.	1	..	..	..	..	..	1	..
Total		105	145	27	17	90	121	222	283

availed themselves of the clinic service, in contrast to the number of males.

In classifying patients according to occupation in Table 4, it is of interest to note that the

gram, housewives are always encouraged to send servants to the clinic for examination for a venereal disease, inasmuch as persons so infected and not under treatment are a definite public

TABLE 4. CLASSIFICATION OF PATIENTS ACCORDING TO OCCUPATION

	Syphilis		Gonorrhea		Negative		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
Butler	1	0	0	0	2	0	3	0
Chambermaid	0	3	0	0	0	0	0	3
Chauffeur	3	0	0	0	2	0	3	0
Clerk	1	0	0	0	2	0	3	0
Deliveryman	2	0	0	0	2	0	4	0
Domestic	0	66	0	5	0	43	0	114
Housewife	0	35	0	6	0	31	0	72
Laborer	9	0	2	0	11	0	22	0
Laborer W.P.A.	13	0	5	0	8	0	26	0
Laundress	0	7	0	0	0	0	0	7
Night Watchman	2	0	0	0	0	0	2	0
Porter	19	0	8	0	6	0	33	0
Pre-school	6	2	0	0	9	14	15	16
School	7	8	3	2	23	23	33	33
Taxi-driver	2	0	1	0	0	0	3	0
Unemployed	30	19	7	4	16	8	53	31
Waiter-Cook	3	0	1	0	1	0	5	0
Waitress	0	3	0	0	0	1	0	4
Miscellaneous	7	2	0	0	10	1	17	3
Total	105	145	27	17	90	121	222	283

health hazard in the homes in which they are employed.

SUMMARY

The program of the Social Hygiene Clinic operated by the Evanston Department of Health is described in detail. Funds for maintaining the clinic are provided jointly by the City of Evanston and the Federal Government. Any resident of Evanston is eligible to free examination and treatment for a venereal disease. In view of the many social problems which arise in a public venereal disease clinic, patients who can afford to do so are always encouraged to place themselves under treatment with a private physician.

One clinic session each week is devoted exclusively to admission and examination of new patients. It is felt that adequate preliminary examination cannot be given to new patients who are admitted to therapeutic clinic sessions. A thorough medical examination is required before treatment is begun. Special medical examinations not available in our clinic are conducted in the out-patient department of the Evanston Hospital. Particular attention is devoted to complete medical histories and records. Procedures carried out for each patient are recorded and initialed by the physician who did the work. Injections of any sort by nurses are not permitted. Icterus Index determinations and routine urinalyses are made in our laboratory throughout the period of treatment with arsenical drugs.

Children of syphilitic parents are examined, and placed under treatment if found to be infected. Those who do not show positive findings are kept under observation and reexamined at intervals of six months. Persons who lapse treatment before a cure is effected are contacted by a Public Health nurse and urged to return for further treatment. Three per cent. of the patients in our clinic have lapsed treatment for a minimum period of three weeks, but 98 per cent. returned.

Eighty per cent. of our patients are negroes, and a diagnosis of tertiary syphilis has been made in the majority of cases. The small number of cases of syphilis detected in the primary or secondary stages suggests that most chancres are not detected, or the patient does not seek early medical advice.

Our clinic does not conduct examinations for

syphilis or gonorrhea in persons contemplating marriage.

DISCUSSION

Dr. S. M. Miller, Peoria: As we initiated a venereal disease control program in Peoria on April 15th I can add nothing as yet from our experience, but certain thoughts have come to me while listening to Dr. Tucker. The Peoria clinic like that of Evanston is organized for the municipality. The rest of Peoria county has no venereal disease program. In like manner, municipalities throughout the state are developing their control measures, while large areas of the state will continue to exercise control over venereal disease. Without control will tend to neutralize the efforts of its sections of the state that are endeavoring to stamp out venereal disease. The county and not the municipality should be the unit of control.

Evanston is fortunate in not having the problem of prostitution. The prostitute is a difficult problem. She is always destitute. She can engage in no other occupation. She is irresponsible and difficult to control. When infected she leaves the city and disappears. In order to insure control and treatment of the infected prostitute it is necessary to convict her of solicitation and send her to a penal institution. Communities alone cannot cope with this problem. Ultimately there should be state institutions for the isolation and treatment for persons suffering from venereal disease. This is not intended to take the place of local control but to supplement it.

Dr. John J. McShane, Springfield: Due to the large number of persons who will not remain under treatment and who do not comply with our rules while infectious, this department has in mind arranging for a farm for such individuals, especially prostitutes, where they may be held under quarantine and treatment. It is hoped that under such control and supervision these people can be educated and rehabilitated while on this farm.

BENZEDRINE SULFATE IN SEVERE DEPRESSIONS

ISIDORE FINKELMAN, M. D.

CHICAGO

and

DANIEL HAFFRON, M. D.

ELGIN, ILLINOIS

Benzedrine has proven of value in several neuro-psychiatric conditions. Prinzmetal and Bloomberg¹ have used it successfully in narcolepsy. Their results have been confirmed by others.² It is of some value in chronic exhaustion and certain types of psychoneurosis, accompanied by a feeling of fatigue and depression.³

From the Elgin State Hospital and the Department of Nervous and Mental Diseases, Northwestern University Medical School.

At the Elgin State Hospital Anderson⁴ has found that it is of no value in dementia praecox. This has also been the experience of Myerson and his coworkers.

Shapiro and one of us (Finkelman)⁶ have found benzedrine, when administered with atropine or hyoscine, to be of definite value in chronic encephalitis. There was an improvement in the sleep cycle, an increase in energy, and a diminution in the frequency of oculogyric crises which at times disappeared entirely. This has also been noted by others.⁶ The stimulating effect of benzedrine on the central nervous system has led us to try it in the depression of manic-depressive psychoses and in involuntional psychoses.

Wilbur et al⁷ noted that of ten patients in the depressed phase of manic-depressive psychosis, seven experienced marked relief and three noted an exacerbation of symptoms. The patients who experienced relief had not been severely depressed.

We treated 15 patients with benzedrine; five were classified as depressed phase of manic-depressive psychosis, seven as involuntional psychoses, one mixed type of manic-depressive psychosis and two who were severely depressed but whose behavior did not fit any of the nosologic entities, and whose cases were left undiagnosed. The duration of the treatment varied between three weeks and three months.

The benzedrine sulfate was administered in the early part of the day, in divided doses, the dosage ranging between 20-60 mgs., administered in the form of 10 mg. tablets.

Results. One patient improved markedly after benzedrine was administered for three weeks. This patient was a woman of 45, admitted to the institution July 24, 1938. A year before her admission she developed delusions that people were talking about her and were following her about the street.

While in the institution she was depressed and retarded, tearful, self-accusatory, felt that something was going to happen to her, but didn't know what. Asked repeatedly not to be harmed, complained of hot flashes. She was diagnosed as a case of involuntional psychosis.

Benzedrine sulfate therapy was started on August 22, 1936, and continued for three weeks, the dosage being 30 mgs. a day.

While receiving this medication, patient became cheerful, alert and responsive, exhibited no overt psychotic behavior. Her improvement occurred simultaneously with the administration of benzedrine.

The other fourteen patients exhibited no favorable response to treatment. During the administration of the drug, however, two of the patients recovered two and three months respectively after treatment was discontinued. These were cases of depressed phase of manic-depressive psychosis, a condition in which spontaneous recoveries are the rule. Three of the patients were definitely affected adversely by the treatment, one a woman of 32 in a depressed phase of manic-depressive, became resistive and excitable. Therapy was discontinued and the resistiveness and the irritability ceased. Another depressed patient became restless, irritable, acquired a suicidal tendency which ceased after the medication was discontinued. In a third patient the treatment was discontinued because the patient became combative.

CONCLUSION

Benzedrine sulfate is a useful drug if its limitations are known. It is of value in post-encephalitic Parkinsonism, narcolepsy, mild depressed states and chronic exhaustion. However, it is of no value and may be harmful in severe depressions.

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One should go in with an open mind, though one should not keep the mind constantly open. As G. K. Chesterton said, "The object of opening the mind as of opening the mouth, is to shut it again on something solid."—*Herrick*.

IMPROVEMENTS IN THE SURGICAL TREATMENT OF GALL-BLADDER DISEASE

(This article does not deal with cases of acute cholecystitis, or jaundice.)

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CHICAGO

Much has been done recently to improve the results in the surgical treatment of gall-bladder disease. The innumerable articles published on the various phases of this work are scattered throughout the literature. Much of the clinical experience has never been recorded. It seemed logical, therefore, for us to report our findings, based on what we have read, on our clinical experience both in private practice and as surgeons for many years for the gall-bladder group of the Michael Reese Hospital and, last but by no means least, on what we have learned in discussing the matter with other surgeons and physicians.

Selection of Cases. By studying our end-results in a carefully selected series of cases in whom a complete follow-up was possible, we found concrete statistical evidence to prove an assumption which we had long suspected, namely, that the percentage of symptomatic cures attained after operation was highest in those patients who had complained of typical colics pre-operatively and in whom gallstones were found, and that the percentage of cures was lowest in those patients with vague symptoms and in whom no stones were found.

Furthermore, our check-up showed us that in those cases in which the pathological changes in the gall-bladder were very marked, the percentage of complete relief of symptoms was higher than in that group of cases with only slight pathological changes. Analyzing this from the point of view of length and severity of the underlying condition it might seem strange, because marked pathological changes—especially fibrosis—would presuppose a prolonged period of

disease as compared to slight pathological change, and as a rule in surgery we might say that the shorter the duration of the disease the better the after results. The explanation may lie in the fact that in the group showing definite pathological changes of the gall-bladder the organism has adjusted itself and, also, that in the group with few pathological changes other factors besides gall-bladder disease may account for some or all of the symptoms. The statistical evidence was so clear that we now consider the absence of stones as a contraindication to operation except in exceptional cases. We found, furthermore, that a clinical diagnosis of stones is not sufficient. We found in a surprisingly large number of cases in which the typical symptoms of gall-bladder colics were present and in which we, and the medical men in consultation, had diagnosed the presence of stones in spite of negative x-rays that at operation there were no stones. In this group at least half of the patients continued having symptoms after the cholecystectomy similar to what they had had before. We have, therefore, come to rely more and more on x-ray report, and, in fact, I do not consider it far-fetched to say that I believe Roentgen ray diagnosis is as important to a gall-bladder patient as it is to a fracture patient.

In short, we now group our patients according to desirability for operation (omitting from this discussion all acute cases and all cases of common duct obstruction) as follows:

1. Patients with history of several typical gall-bladder colics in whom x-ray reveals the presence of gallstones or on repeated examination a complete absence of filling of the gall-bladder. In this group, granting the absence of other definite changes, the great majority of patients will experience symptomatic cure.

2. Patients with more vague gall-bladder symptoms (belching, dyspepsia, heartburn, vague pain in hypochondrium, selective food habits etc.) in whom x-ray reveals the presence of gallstones or complete absence of filling. In this group most of the patients will experience symptomatic relief.

3. Patients with very few gall-bladder symptoms but with a positive x-ray diagnosis of either gallstones or cystic duct obstruction. The gall-bladder disease is usually discovered during the course of a routine examination. In such cases a very careful search should be made for some

From the Gall-Bladder Group of Michael Reese Hospital.
Read in part before the medical staff of the Lutheran Deaconess Hospital, May 20, 1938.

cause other than the diseased gall-bladder as the source of their symptoms. Such patients, furthermore, should be given the benefit of prolonged medical treatment because taken as a group the percentage of symptomatic relief is small, about 50 per cent.

4. And lastly, that large group of patients with either typical or vague symptoms in whom, however, a clinical diagnosis of gall-bladder disease might be made in spite of a normal cholecystic response to the dye. It is in this group that we operate only on the exceptional case. In the earlier days of the Graham-Cole test, we frequently used to back our clinical judgment against the negative x-ray evidence and suppose that the stone might have been hidden, only to find at operation with most disconcerting regularity that we were wrong and the x-ray had been correct. Nowadays we either refuse to operate upon these patients at all or, if we do, we do so with the understanding that we are performing an exploratory laparotomy and are perfectly willing to leave the gall-bladder in place if the gall-bladder seems to be normal and other pathological changes are present. Only a few days before writing this report I operated upon a patient whose dye test failed to reveal definite changes but where a diagnosis of gall-bladder disease had been made by one of the leading clinics in this country and confirmed by several of our best medical consultants. Here, in spite of previous experience, I was willing to call the x-ray wrong. At operation I found a normal gall-bladder, but a peculiar malformation of the omentum which permitted a small intestinal herniation and which was responsible for the symptoms. Once again the Graham-Cole test properly interpreted was of more value than clinical evaluation.

Laboratory Diagnosis. I will not go into the method of x-ray diagnosis further than to say that we follow the standard technique. We are not satisfied with a single plate which discloses stones but demand several plates taken from different angles. This precludes a calcified gland, a kidney stone or a gas bubble in the intestine, which at one angle may overlie the gall-bladder shadow, from being called a gallstone, because on the other plates, taken at different angles, this interfering shadow will be thrown out of its relative position. We never trust a "non-filling gall-bladder" report unless it is checked by a subsequent "double dye" test. Wherever

possible we demand a complete gastro-intestinal x-ray as well as a gall-bladder series and in innumerable instances have discovered duodenal ulcers and other abnormalities.

We have been very dissatisfied, in the whole, with the so-called liver function tests. Here, in contrast to what I said before, we have found clinical judgment far superior to the laboratory tests. Of late, however, we have been interested in studying the proportion of the blood cholesterol esters to the blood cholesterol and have attached a great deal of importance to this test whenever we found that the proportion is greater than 1-3. The icterus index of the blood of a patient is a sensitive determinant, more sensitive than we can determine clinically with the naked eye. Of course, the usual routine blood count, urine analysis, and blood chemistry tests are as necessary before operation in a gall-bladder patient as in any other.

Preoperative Treatment. (As I have said in the title, the article does not deal with jaundiced and acute cases. These two types of patients require such radically different handling from the non-acute, non-jaundiced patient that one article cannot well deal with both groups.)

All patients on our service are hospitalized forty hours or longer before operation. Wherever feasible, all patients are placed on a high carbohydrate diet for several days before hospitalization, diabetics and potential diabetics of course excepted. Careful bleeding and coagulation time tests are made preoperatively. On patients in whom we fear liver damage, we frequently order an intravenous infusion of 10% glucose the night before the operation. Otherwise our routine varies little or not at all from that of most patients for laparotomy.

Operative Treatment. I dislike the word routine. However, if by routine is understood our usual method of procedure, but a method which is frequently varied according to fit the individual case, then I can say that our routine is as follows:

Cyclopropane and oxygen anesthesia usually, spinal anesthesia occasionally.

Transverse incision wherever possible, right paramedian incision in patient with narrow sloping costal margins or in patient where we suspect that plastic work on the duct may be indicated (we have no hesitance either of carrying the transverse incision clear across or of enlarg-

ing it by a T-shaped paramedian cut if necessary).

Careful exploration of the entire abdomen, gall-bladder and ducts.

Aspirating the gall-bladder contents when the gall-bladder is distended. We feel that this step is very important and an important safety factor in saving the common duct from injury. Very frequently the base of a distended gall-bladder prevents the surgeon from seeing the cystic duct and the common duct. As long as both cystic and common ducts are in clear view, there is no danger of injuring the common duct; on the other hand, the moment the surgeon works blindly in this important area, danger of injuring the common duct is always present. The gall-bladder can easily be aspirated without spilling any bile if a little care is used, but even if a few drops of bile are spilled, the likelihood of a resulting peritonitis is practically nil. Infection after a cholecystectomy is much more likely to result from opening latent infectious processes buried in adhesions or in glands than from bile contamination.

Locating the cystic duct, verifying that it is the cystic duct by demonstrating the common duct, ligating and cutting the cystic duct with a single ligature of fine catgut or silk. We prefer single ligatures to double ligatures wherever it is necessary to place a ligature, because we feel that the double ligature of necessity causes the intervening bit of tissue to become necrotic and thus interfere with closure of whatever was ligated. The bigger the duct or the larger the vessel, the more important it is, we think, to place only one ligature.

Ligating the cystic artery separately, if necessary,—again only single ligature.

Removal of the gall-bladder from below upwards.

Supervision of the field of operation to verify hemostasis, etc.

Closure of the abdomen in layers without drainage.

We never open the common duct unless it is markedly dilated, or we can palpate a stone, or the patient has had a definite jaundice history. In the latter case, we still do not open the duct if the icterus index at time of operation is normal, the duct not enlarged, and no stone palpated. The greater the number of patients who return to us for one, two and five-year check-up,

the more sure we feel that our policy regarding common duct exploration is the correct one. The mortality and morbidity rates rise as soon as the common duct is opened and drained.

Postoperative Treatment. We attempt to keep our postoperative treatment as simple as possible. The vast majority of cases are treated very much as we treat our appendectomy or hernia patients. We give them sufficient morphine to keep them comfortable, usually one or two hypodermics for the first and sometimes for the second day. We allow them fluids as soon as they can take them and then increase the diet pretty much as the patient desires. We allow a back-rest in bed almost immediately and in transverse incisions, especially in young and strong individuals we allow the patient to be in a wheel-chair in about a week. The patient may walk or go home, according to his or her strength. Patients who come to us from busy homes or offices are usually encouraged to add a little rest cure to their postoperative convalescence and, if we can, we keep them in the hospital and quiet longer than would otherwise be necessary.

Occasionally, just as after any major operation, we give intravenous glucose or blood if this seems indicated. There is one thing, however, we make a point of seeing to, and this applies to a patient who is returned from the operating room after any major operation, and that is we try to keep them from becoming dehydrated through excessive perspiration. Again and again I see physicians making great effort in the laudable endeavor to supply a recuperating patient with fluids and apparently completely overlook the fact that the patient is sweating out as much or more fluid than is being given because of the supposition that a patient returning from the operating room must be smothered in blankets. Naturally, we, too, do not want to have our patients take cold, but in a modern, steam-heated hospital this is not apt to occur, and as a rule one blanket or in hot weather a single sheet will be all the covering the patient needs. Our nurses are instructed to guard against chilling, but they are cautioned just as much to try to keep the patient from excessive sweating.

Convalescent Treatment. When the patient is discharged from the hospital, he or she is usually told to "eat carefully" and on general

principles to avoid the excessive use of alcohol, highly seasoned foods and fat. On the other hand, we purposely prescribe no diet, but if the patient is intelligent, advise him only to refrain from the types of food he finds he does not easily tolerate. We have noted, as has everyone else, that a certain small percentage of patients may have one or two or even more attacks of pain simulating their previous attacks within the first few weeks or months after operation. These attacks are usually much milder than those which the patient had before and usually cause more mental anxiety than pain. These attacks have been attributed to spasm of the muscle of Oddi and this may well be the mechanism involved, although we have no way of being certain. Our experience with nitroglycerine and other antispasmodics has not been as good as that described by many other authors. I have the feeling that emotional upsets, worries, fatigue, etc., are in part responsible. Whatever the cause is, these attacks occur only in a small percentage of cases, rarely last longer than a few months and disappear without any treatment.

We always have our gall-bladder patients return to us two weeks and a month after leaving the hospital and after that at yearly intervals.

CONCLUSION

The foregoing is a brief review of the methods by which we of the gall-bladder group at Michael Reese Hospital choose our patients for operation, prepare them, operate upon them and treat them afterwards. Since we have given up operating except when the x-ray reveals stones or obstruction to the cystic duct or in those rare cases in which clinical judgment forces us to in spite of a normal x-ray response, our results have been most gratifying. We feel that the comparatively simple preoperative and postoperative technique which we use, and especially the omission of drainage, have contributed to this success. We feel that by bringing both the cystic and common ducts into clear view we eliminate the danger of common duct injury, and we are sure that by shunning promiscuous open common exploration and drainage we decrease the mortality and minimize the morbidity figures.

Especially are we convinced that we have gained much useful information by our group study of gall-bladder disease and that our frequent discussions and rounds in which not only

the medical men and the surgeons participate, but the chemist, the physiologist, the roentgenologist and follow-up workers as well have been invaluable to us.

STANDPOINT OF THE RESERVE

GEORGE DE TARNOWSKY, COL., M. R. C.

CHICAGO

What will the Reserve do in the case of war? They will do as much as they are trained to do in peace time, no more, no less. As you heard Colonel McKinley say a few moments ago, we have been almost always unprepared. That has run through the whole history of our country. At this period of our country's life we are probably better prepared than ever before, but we still lag way behind the other nations of the world.

The Reserve Officers of whatever branch of service represent the third line of defense. What will the Medical Reserve Officers do when that hour comes? One of two things, either be sent to camps to train recruits or set to work organizing a medical regiment and be probably assigned as regimental surgeons. That means that the Reserve Officer must know the basic drill of a soldier before he enters active military service. Only by so doing will he be capable of carrying out his original commission. We are not going to be sent to the front immediately or in two months or three months. We are the third line defense. We will have to do the training, organizing and preparing of medical units for work as they are sent to the front wherever the front may be. As an old war veteran, I want to make an earnest plea to the younger men here present to keep up your activities in the Reserve Corps and to enlist as many young men as possible to join the Medical Reserve Corps. We are being depleted very rapidly. Some of us are being put on the retired list on account of age; others are dropping out because of infirmities, and the efficiency of the Reserve Corps will depend upon you young men who were not overseas during the war and who now have a chance to join the Reserve Corps and be sent to camp to learn the basic work of a soldier.

There are two distinct classes, as I see it, of medical officers in the Army. The first class will be put into base hospitals where the maximum amount of technical training and a mini-

mal amount of military training will be required. They will work approximately under peace time conditions far away from shells, airplanes, etc. Their function will be largely surgical. They will have to do some paper work but they will be able to train clerks. On the other hand, the medical officers who become regimental surgeons or who are put into medical regiments in the zone of activity must not only be, as Colonel McKinley said, good doctors, but good military surgeons, and they must know a good deal about military tactics. Such a regimental surgeon is put on his own responsibility. In time of battle the officer in charge of a collecting station or field hospital cannot run back to talk to the Colonel, asking him what to do. He must act on his own initiative. If he is in command of a collecting station, he must move it if it is bombed, on his own initiative. He may be told what the battle line will be, but emergencies will arise so it is up to the young captains to develop initiative, to develop a military spirit and make the men under them feel that they are well handled and that they have received the best possible leadership under the circumstances. The medical officer in command of a company must be a father to his men. I think a good military rule to follow is not to ask any of the men under you to do anything that you cannot do a little better than those men can. If you can do that, then they will go through hell-fire for you, for their regiment and for their division. The time to develop that military spirit is while in the Reserve Corps.

According to Colonel McKinley, funds for the Medical Reserve Corps are dwindling. There are courses being given in Chicago and elsewhere. Keep yourself imbued with the idea that you are not only to get a medical officer's rank but a good military training. Now is the time to get ready for whatever eventuality this country will have to face in the future. It is true that the Reserve Corps is worse off than the National Guard. We never had enlisted men, we had surgeons.

It is important that you, as military surgeons, should know what divisions are in the battle front, where your service begins and where it ends. You cannot go beyond, you cannot go to right or left; you must know exactly what to do and what not to do. There are certain things you must remember. When an ambulance goes

to the front it must carry with it a certain number of splints, blankets, etc., for your wounded when brought to the field hospital. When you get into actual warfare you must know what to do. You may talk about the ills of war; there is romance in it. It is an experience that none of us would care not to have had. We had trench foot, the flu and mustard gas, but all in all there was considerable romance. Any young man with good red blood in his veins I would advise to go to the front lines and become a regimental surgeon or a commissioned officer in a medical regiment. That is to me excitement unforeseen. In the base hospital it is like working in a big general hospital in civil life. Again, I make a plea for you younger men to go among your friends and among your classmates and urge them to join the Reserve Corps. Join today; do not wait, so that we may have large numbers with military training, so that when the M hour comes we may have large numbers to train recruits. When I look back at 1917 and think how unprepared we were at that time; not one per cent of the officers had any notion of what military life was and we began absolutely at the bottom. We want to avoid that and the way to avoid it is by getting some training now before we come to M hour.

IF WAR SHOULD COME, WHAT ROLE WOULD THE MEDICAL PROFESSION PLAY?

NORMAN L. SHEEHE

Department Surgeon, American Legion

ROCKFORD

Mr. Chairman, Department Commander, and My Friends: Last year when I addressed the Veterans' Service Committee of the State, I brought out the fact that the veterans and the medical men were both interested in veterans' facilities. I do not see that I should dwell further upon that point at this time. Rather I am going to give you a brief history of the Medical Commission in the American Legion in the Department of Illinois in order that you might know us better.

In 1931 the program of the department of Illinois Medical Commission was brought out by our Chairman of this evening, Dr. Frederickson, who brought it to the American Legion in convention assembled. They voted upon it and the

plan was accepted, as a large number of you know. Dr. Frederickson served as department surgeon for two years. He did great work visiting the different facilities and building up a real Medical Commission. The personnel of this commission is made up of the department surgeon, assisted by the department commander and approved by the Executive Committee of the State Department. The five divisions are represented by the division surgeons, of which there are some present tonight. The division surgeons are selected by the division commander and sanctioned by the Department Surgeon. There are 25 district surgeons and they in turn are approved, and have their particular duties assigned to them in the district. Those duties are somewhat too numerous to bring out at this time. Counties outside of Cook County have surgeons and posts throughout the State of Illinois have their post surgeons. This comprises the Medical Commission of the Department of Illinois, of the American Legion. Offhand, I would say that we number somewhere between 700 and 900. The purpose of the Medical Commission is to better serve the veterans through the Medical Commission in order that, through organized efforts, better, more effective, and more coordinated results, will accrue to the benefit of the ex-service man.

The program in 1938 is, first, to bring the medical men closer together in the post in order that a better understanding might prevail with common problems faced on a common ground.

Second, is the educational program along medical lines. As you all know, about a year ago one of the large newspapers in the State of Illinois brought out the fact that we should originate a program of social service. Before the paper brought out that idea, it had already been called to the attention of the Medical Commission, and at its Executive Committee meeting the decision was made that we should not delve into that particular problem until some outside organization or the Legion itself brought it to hand. The matter was of such importance, however, that it was not long before the eradication of venereal diseases was made an important part of the 1938 program. And insofar as the Medical Commission can, it will, through the district, county and post surgeons, bring to the attention of the American Legion and the general public an educational program of great value in order to promote this worthwhile project.

The third point of the program is the blood donors' group. About three or four months before the blood donors' group was mentioned in the American Legion's national magazine, the thought had come to me about the wisdom of having such a group. I mentioned it to various posts that I visited and found the men very eager to form such a group. I learned later that the idea had been tried in some places in the east with great success. I am not aware of how many blood donors' groups there are throughout the State of Illinois, but I do know that in one post in the Chicago area there are 75 or 79 enrolled as blood donors. I can think of no better way to serve our individual communities than participating in the "peace time" service, and it is my hope that every post in Illinois will follow suit. These men in the posts group together, have their blood examined through the Kahn test and by blood typing so they can be placed on record in the hospitals. If an emergency presents itself where blood is needed and the recipient cannot supply a relative, these men are then called upon in turn to serve. This is a real community service, one of the many services that the American Legion continuously sponsors. Sometimes a professional blood donor is required and when there is none available, one of these men may charge the regular fee, half of which may go to him as the blood donor and half to charity or maybe he will prefer to give the whole thing to charity.

The fourth point of the program is the Boys' State in Illinois. As Illinois has always been the leader of other states in the country in nearly everything the American Legion has sponsored, so it has been with Boys' State. The idea of Boys' State originated in Illinois and has been incorporated in the Americanism work of the Legion. It was organized by Comrade A. L. Card in southern Illinois, and others who conceived the idea that whatever could be done for the youth of America, not only through the Boy Scout organization and others, should be done by instilling a greater love for America by teaching greater respect for American institutions and government. This is being done in a practical way by creating a boys' government patterned after our own government. They started out with something like 217 boys in this state two years ago; the next year they had 500, last year 1,200, and this year they are

going to take care of 1,600 boys who will live together and solve real governmental problems. For the first time the Medical Commission is co-operating with the Boys' State. I expect to be with them in Springfield this year. This will afford the boys the opportunity of a medical check-up to prevent any contagion interrupting our plans. We will take care of emergencies and the like, but, as the boys have been checked before they enter camp, we do not anticipate much trouble with the exception of minor ailments. The Medical Commission can play a big part in the success of Boys' State and we are glad to cooperate.

During the present year I have been asked to present the Illinois Medical Commission set-up to the Department Commander of Indiana. I have had a similar request from Ohio. While we are not the only state in the United States that has a medical plan, we are pioneers in a practical program and we hope it will not be many years before the other states will find a place in their Legion program for a Medical Commission that will make use of Medical Legionnaires who can be as necessary to the organization today as they were during the war days of the past.

THE MEDICAL PROFESSION IN WAR

LEONARD APPLEQUIST

Department Commander

AURORA

My Comrades of the Medical Profession: I am very happy to be here at this gathering and to bring you the greetings of the Department of Illinois and to talk to you for a few moments. This is a very lengthy subject and it is very important. Since we returned from the war we have been very much interested in national defense. We have been criticized severely for that. Some families would not allow their boys to be members of the Boy Scouts because mention was made of war. The only one who can appreciate war is someone who has seen it. Today the United States stands somewhat in a position to defend itself against aggression, probably not as efficiently as it should, but the entire success of that program has been due to the persistence of the men of 1917 and 1918 who have united themselves in the various organizations, such as the Legion, the Veterans of Foreign Wars, Disabled

American Veterans, etc. Today we are still continuing the program of national defense for defensive purposes only and not for aggression. That was the continued mandate in our conventions. Some 16 years ago the national convention through some Department resolution enacted a mandate that an act be incorporated into the laws of the United States that would take profit out of war. In 1919, after the last boy had returned from overseas, we were somewhat startled, we men of 1917 and 1918, to learn of the huge profits that had been made out of that war. We discovered that a billion dollars had been spent in the manufacture of airplanes and not one American airplane ever reached the front during the emergency. We were staggered by the fact that \$800,000,000 had been spent in the manufacture of shells and only 20,000 American shells were fired at the front. We were staggered when we read that a sufficient supply of spurs had been manufactured to give every officer 36 sets of spurs per man. Who got the money? No one has yet discovered. Imbued by the courage and the optimism of the men who fought in 1861 to preserve this as a nation, our boys went forth to France, and with their comrades beside them they held the line in the Argonne and made it possible to break fortifications that it had been said would be impossible to do. Oh, I remember when we said we are here for four or five years; we are never going to break the Hindenburg line, but they did. And so we returned home, and we discovered that almost 20 thousand new millionaires had been made out of the enormous profits of that war. And across the sea are thousands of crosses, each marking the spot where some boy laid down his life for his country. The Legion made up its mind to use all its splendid strength to take the profits out of war and we shall continue to do so in spite of all the propaganda that is being used to defeat the compulsory service act. When one gentleman appeared before the Committee on Military Affairs, they asked him, because he had made \$3,000,000 profits out of that war, "Do you think it is right for some young fellow, starting out in life, sent 3,000 miles from home to fight for certain ideals, at a pay of \$1.10 per day, to lay down his life?" He said, "No, I think he should have five." The percentage is all wrong. That is all the compulsory service act is for, to establish a partnership

and to see that no profit is made out of war. My friends, the Constitution of the United States places in the hands of the President dictatorial powers during war. He is the commander-in-chief of the Army and Navy and he can go into any factory and command them to make the supplies needed in war, and the act of 1916 provides that he who refuses to cooperate is punishable by a fine of \$50,000 and not less than three years in prison. If you do not believe we should take the profit out of war, it is up to you as representatives of the American Legion to see that another resolution is passed removing this mandate from our national program. It is entirely up to you. We think we are just in saying that such an act should be passed. That is the only motive of the Legion behind the compulsory service act.

We have been very active, as an organization, and we appreciate whatever you have done. We are now trying to put forth a child welfare program. Last year, for your information, in the United States the American Legion and its Auxiliary spent over \$3,000,000 for clothing, food and medical treatments to better than 381,000 needy children. We have been recognized by one President of the United States as the second largest sponsors of Boy Scouts. The Legion for the last five years has trained boys in playing baseball, not for the purpose of making ball players out of them but with the belief that playing the game according to rule, when they reach their majority they will govern themselves according to the laws that govern society.

As the average veteran, 46 years of age, passing away at the rate of 110 a day, looks about, he wonders what is going to be the future of America. Here are subversive organizations going under a certain name, training better than 1,000 men in military tactics. They do not belong to the National Guard; they are not a part of our Regular Army. What is their purpose? As Legionnaires we demand that Congress investigate these organizations that are militantly serving Germany, Spain and Russia. Why is it that they use the American flag to cover the sinister motives they have in their minds? A certain newspaper reporter said to me, "Commander, will you furnish me with certain men that can go with me to certain places; I am going to show you what is going on in America because I have entrée." I tell you that every

man who served in 1917 and 1918, if he believes that America should continue as a democracy, should be on the side of this program of preserving the same. No one knows what tomorrow will bring. It is your job and my job to help preserve American democracy. I hope you will cooperate with us. It is a pleasure to be with you and to have these few minutes with you.

MUMPS COMPLICATED BY ACUTE MENINGOENCEPHALITIS

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CHICAGO

The common complications of mumps need no notation here, since their occurrence is a familiar part of the disease picture. Central nervous system involvement, however, is much more uncommon.

In the U. S. Army during the World War there were 230,356 cases with primary admission as mumps.¹ The total number with cerebral complications is not given although there are certain figures for individual units of the army. Radin² reports on 5,756 cases of mumps in soldiers with no mention of meningoencephalitis. Neither are total figures for this complication found in the above cited United States Army report, although fourteen cases with one death are noted, including an autopsy report by Larkin.³

Rather few reports of cerebral complications of mumps have been made. Acker⁴ gives a historical resumé, with 29 collected cases and four deaths, to which he adds two cases with one death. Voisin⁵ reports an autopsied case. The report by Haden⁶ of 466 cases of mumps with nine cerebral complications and no deaths, gives a rather high percentage incidence and favorable outcome for his group.

The writers observed a case of mumps in a previously healthy girl of eleven years, who had bilateral acute epidemic parotitis and three days later in onset bilateral submaxillary gland swelling. Five days after onset there was severe headache with rise in temperature to 105° F. This was accompanied by nausea and vomiting, and later, delirium. On examination the next day (6th day) the patient was irrational and complained bitterly of headache and photophobia. She vomited all food—solid or fluid—and water.

Positive findings were: Moderate swelling of the

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submaxillary glands with tenderness; slight induration and tenderness of the parotids and adjacent tissues, but with subsidence of the previous marked swelling; slight retraction of the neck, with moderate stiffness; markedly positive Kernig's sign; right pupil normal in appearance and reaction to light, left contracted with slight, sluggish response to light; slight deafness; superficial reflexes hyperactive; Babinski's sign positive. There were irregular areas of superficial hyperesthesia.

Sedatives were administered hypodermically, 5% glucose solution given intravenously and tap water by rectum.

On spinal puncture 40 cc. of fluid was withdrawn, and 30 cc. of antimeningococcic serum given intrathecally. The fluid was under increased pressure, colorless, and had a fine flocculent turbidity. Cells numbered 305 per cu. mm. with 98% lymphocytes and 2% polynuclears. Globulin was moderately increased, and albumin markedly so, with a heavy flocculent precipitate. The fluid was sterile.

The white blood cell count was 7200 with 60% polys., 36% lymphos., and 4% monocytes. Urine examination gave an occasional erythrocyte, 3-4 pus cells per high power field, and a light albumin test.

Following spinal drainage the patient improved somewhat subjectively and there was a moderate drop of temperature. Next day there was an aggravation of the headache and vomiting. Considering the course of the disease and the spinal fluid findings the tentative diagnosis of mumps meningoencephalitis was made. It was decided to adopt Haden's⁶ recommendation to do spinal drainage for treatment.

The spinal fluid at this time was under considerable pressure, and 30 cc. was withdrawn. It was white and quite turbid. There were 925 cells per cu. mm., with 79% polynuclears and 21% lymphocytes. Globulin again was moderately increased, and albumin markedly so. The fluid was sterile. The tryptophane test was faintly positive, and Levinson test negative. The quantitative value for sugar was 66 mg.%, and for chlorides 656 mg.%. The white blood cell count was 11,700, with 68% polymorphonuclears and 32 lymphocytes.

A third spinal drainage was done two days later (9th day). The fluid was under normal pressure, and 10 cc. was removed. This was colorless with a very faint haziness. Cells numbered 95 of which 40% were polynuclears and 60% lymphocytes. Protein was slightly increased. Bacteria were not found. White blood cells numbered 6,550, with 36% polynuclears, 61% lymphocytes and 3% mononuclears. Repeated urine examinations showed a gradual disappearance of albumin and white cells.

During these three days, 6-9th, the patient's condition rapidly improved, so that on the 9th she was able to keep down a little liquid food, and on the 10th to sit up.

On the 15th day urticaria appeared on the lower extremities and lower abdomen. Five days later there was a chill, with fever to 102° F., and anorexia. Pain and swelling of the right hand and shoulder appeared, spreading to the knees and ankles. Within 24 hours

practically every joint of the body was involved, including the spinal column and the jaw. Blood cultures were negative. Red blood cell sedimentation speed was moderately increased. Treatment included adrenalin and calcium gluconate. Subsidence of the arthritis occurred within three days.

DISCUSSION

Actual proof of the correctness of a diagnosis of mumps meningoencephalitis is difficult to get. Assuming that the causative agent is a virus animal inoculation would seem to offer aid. M. Woolstein produced mumps in cats with filtered saliva from a human case, and Johnson and Goodpasture injected filtered mumps saliva into the Stenson's ducts of monkeys with positive results. Spinal fluid from our patient was injected into the testicles of several rats of different ages and into the testicles of two rabbits. No change was observed either in vivo, or pathologically with the removal of the testicles and making of microscopic sections. However, in virus infections of the central nervous system, as in poliomyelitis and epidemic encephalitis the spinal fluid may not be suitable for disease passage by animal inoculation.

In the central nervous system disease occurs with undisputed mumps, and other types of infection ruled out, then the reasonable assumption can be made of mumps complication. However, cases are reported in which the cerebral symptoms are primary in onset. In Voisin's⁵ fatal case the cerebral disease was fulminating with parotid swelling appearing later. In four cases in children dying with cerebral symptoms at St. Bartholomew's Hospital in London, Gordon⁷ found acute parotitis on microscopic examination of the glands after autopsy. The salivary gland infection then may be so slight as to pass unnoticed, especially in young children, or be obscured by complications.

This point naturally emphasizes the desirability of the improvement of laboratory aid in the differentiation of those diseases with high lymphocyte count in the spinal fluid. Such diseases as poliomyelitis, epidemic encephalitis,⁸ lymphocytic choriomeningitis⁹ and mumps meningoencephalitis, with incomplete clinical pictures, may well be confusing to diagnose. Others, such as syphilis and tuberculosis, may be left out of discussion.

SUMMARY

Meningoencephalitis as a complication of mumps has been reported often enough to accept,

but certainly is not so common as to be treated with the easy assurance found in some medical texts.

Its gravity is impossible to judge from published reports, although it would appear not to be a highly fatal disease.

The case discussed here occurred in the evolution of a mumps infection and is considered most likely an extension of that infection. Delayed allergic reactions followed the administration of antimeningococcic serum.

The difficulty of differentiation between certain of the central nervous system diseases with high spinal fluid lymphocyte count points to the need for improved laboratory aids in diagnosis.

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ONE HUNDRED CASES OF MALARIA

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When I began practice five years ago I considered malaria to be a disease mostly confined to the southern states and tropics. I had the impression that I would see a few cases of malaria and that it would be easy to recognize and diagnose from a history of chills and fever and a blood smear. This impression was found to be true in so far as typical cases of malaria were concerned. However, after having several patients whose underlying difficulty was at first hard to define and later was found to be malaria, without any history of chills and fever, I began to routinely examine a blood smear on any patient whose history and symptoms indicated that a rather thorough examination should be made.

In the twenty-five months ending June 1, 1938, I have had one hundred cases of malaria. In each case malaria was proved by finding the parasite in the blood smear and by immediate clinical improvement following treatment. Of these, twenty-eight cases gave a typical malarial history and in most of them patients had made their own diagnosis. Seventeen of these patients lived on bottom lands adjacent to the Illinois or Mississippi rivers. Eleven patients lived on high land several miles from the rivers.

The remaining seventy-two patients came in with varying complaints as shown in Table 1. Malaria was discovered only after a complete physical examination; a blood smear was made and in each of these cases no typical history of malaria could be obtained. Fifteen of these patients lived on bottom land and fifty-seven on high land. More than one-half of these patients gave asthenia (lack of pep, rundown condition) as their chief complaint, but usually had one or two of the other symptoms associated with it. One-third complained of nervousness (jittery, on edge). One-half complained of gastrointestinal symptoms and with many of these there were no other complaints. Their symptoms were anorexia, vague abdominal discomfort, indigestion and dyspepsia or a definite sense of discomfort in the epigastrium. Edema occurred in the one case cited below. Aching occurred in one-third and was nearly always accompanied by one or more other symptoms. Pronounced loss of weight occurred in nine cases. Dizziness was a very prominent symptom in seven cases. Fever of three-fourths to one and one-half degrees was found in thirteen cases. The patients were unaware of having this rise in temperature but did give a history of having had night sweats occasionally. Ten cases were found to have a rather severe secondary anemia.

TABLE 1

No History of Chills and Fever—72 Cases

Complaints and Symptoms	No. of Cases
Asthenia, malaise	47
Nervousness	24
G. I. Symptoms	35
Edema	1
Aching	24
Loss of Weight	10
Dizziness	7
Fever	13
Secondary anemia	10

In Table 2 is shown the distribution of the cases by months. It will be seen that cases were diagnosed regularly throughout the year, with

the exception of an increase in August and September. Most of the cases giving a typical malaria history were diagnosed in August and September.

TABLE 2

Month	No. of Cases
January	9
February	6
March	8
April	3
May	9
June	6
July	8
August	16
September	15
October	5
November	10
December	5
Total	100

In Table 3 is shown the age distribution, which is nearly the same for all ages except in small children and the aged.

TABLE 3

Age	No. of Cases
1-10	2
11-20	12
21-30	21
31-40	18
41-50	17
51-60	14
61-70	13
71-80	3
Total	100

The following three case reports will illustrate some of the symptoms listed in Table 1:

- Case 1. Mrs. W., aged 53 years, moved to this county and came to me for treatment for bilateral edema of the legs and feet which began and gradually became worse following a cholecystectomy three years previously.
- She had been hospitalized for diagnosis and under the care of two reputable physicians. She had been receiving salyrgan. A complete examination was negative except for the edema, twenty-five pounds over weight, moderate secondary anemia, and what I thought to be some enlargement of the spleen. Kahn test negative. Urinalysis negative. Blood smear showed malarial parasites. Treatment for malaria resulted in disappearance of the edema within two months.
- Case 2. Mr. D., aged 30 years, came to my house late one evening wanting something for "indigestion." He complained of "a feeling like a chunk of lead in the pit of my stomach" and anorexia for a period of four or five days. Quick examination showed that he had no fever and no localized points of abdominal tenderness. He was given a mild laxative and a carminative and told to come to the office in a day or so if not better. He reported to my office the next day feeling no better. Physical examination was negative but a blood smear showed malarial parasites. Malarial treatment promptly cleared up his condition.
- Case 3. Miss S., aged 45 years, came in complaining

only of occasional attacks of dizziness. Blood pressure and temperature were normal. Menopause ended two years previously. Examination negative except for a mild secondary anemia and malarial parasites in the blood smear. She has had no recurrence following malarial treatment.

For treatment, I have used one and one-half grains of atabrine twice daily for one week, followed by one-sixth grain of plasmochin twice daily for the second week. On this dosage no patient has had evidence of toxic effects. Each patient has had a blood smear made one week following the completion of treatment and only in three cases has it been necessary to repeat a portion of the course of treatment.

COMMENT

If in a period of twenty-five months I had encountered only the twenty-eight cases of typical malaria, I would not have been surprised, but one hundred cases seem to me to indicate that malaria is considerably more prevalent than is commonly believed. My practice is in a community which lies between the Illinois and Mississippi rivers, but, with the exception of a strip of bottom land adjacent to each river, the elevation is comparable to that of the remainder of the state and, in the last two years, we have had our share of the drought. The seventy-two cases found in the course of a diagnostic examination seems to me to be significant in that many of us, not suspecting malaria, may be treating patients for symptoms or conditions which are secondary to malarial infection.

These one hundred cases of malaria found in west central Illinois would indicate that the infection is not confined to the southern states or tropics, as stated in a recent text-book:¹

"Malaria was common seventy-five to one hundred years ago in European countries such as Italy, France, Germany and England, and throughout the northern United States. It is now chiefly confined to tropical and sub-tropical countries, being prevalent in India, Burma, Africa, China, Russia, the southern portions of the United States, Central and South America. In those areas where there is a heavy rainfall, it is particularly common, and from time to time the mortality and morbidity are extremely high."

CONCLUSIONS

1. Although we think of malaria as producing characteristic symptoms, its clinical manifestations are frequently atypical, and do not even

suggest the nature of the infection. The disease may be latent. Examination of the blood for malarial infection is, therefore, essential in many illnesses which develop in malarial regions.

2. West central Illinois, at least, seems to be within the malarial belt.

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VOMITING IN CHILDREN

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Vomiting is a symptom, not a disease. In young infants vomiting may occur with great ease and from slight causes due to the anatomical shape and position of the stomach and the instability of the nervous mechanism.

Vomiting in children may at any time become of a serious moment, particularly if it persists, therefore, careful consideration of all concomitant symptoms, as temperature, weight changes, general appearance as well as examination of vomitus, urine and feces is of importance in order to establish a correct diagnosis.

Vomiting in children may be caused either by:

1. *Direct action* on the vomiting center (central), as by:

1. Drugs: apomorphine, anesthetics.
2. Toxemia:
 - a. at onset of acute infectious diseases.
 - b. streptococcal infections of the umbilicus or skin.
 - c. diabetes.
 - d. tuberculosis.
 - e. uremia (rare).
3. Acidosis: as in
 - a. cyclic vomiting.
 - b. cholera infantum.

2. *Reflex Action*: by pressure on the wall of the stomach or the intestines, thus irritating the nerves which convey impulses to the vomiting center in the medulla, as:

A. Gastric

1. *in the newborn*: within the first 24 hours of life vomiting may be caused by swallowing of maternal discharges, or by attempts to force too early feeding.
2. *in infants and children*: regurgitation of food "spitting" may be caused by:
 - a. too frequent feedings.

- b. hasty nursing—swallowing of food too fast.
- c. swallowing of air—not being able to nurse and breathe freely, as in nasal obstruction.
- d. wrong formula—excess of, or intolerance to, fat, sugar or proteins contained in the formula.
- e. too much handling of the baby.
- f. tight abdominal band.

vomiting may also be caused by:

- a. hypertrophic stenosis of the pylorus and pylorospasm.
- b. acute gastritis and gastroenteritis.
- c. poisons and drugs:
 - corrosives, bichloride of mercury, lysol.
 - irritants: ipecac, antimony, calomel, santonin, hexamethylenamine, cough syrup containing too much sugar.
- d. dilatation of the stomach, as may be caused by: chronic overfeeding, chronic indigestion, rickets.
- e. pressure from adjacent structures.

B. Intestinal

1. intestinal obstruction: volvulus, intussusception, strangulated hernia.
2. appendicitis.
3. peritonitis: local, general.
4. intestinal worms.
5. following enema.
6. blow or kick in epigastrium or testicles.
7. tuberculosis.

C. Affections of the central nervous system (increased intracranial pressure).

1. shock or fright—will cause vomiting sometimes of a most serious nature.
2. giddiness, caused by a swinging or a rolling motion, as on a swing, or on a ship, may produce cerebral hyperemia and consequent vomiting.
3. concussion of the brain.
4. tumor (glioma—most common) or abscess of the brain.
5. meningitis: cerebrospinal, tuberculous.
6. hydrocephalus.
7. acute otitis media.
8. sinus thrombosis.
9. epilepsy.

D. Pharyngeal irritation

1. nipple too long or openings too large, so that food reaches throat with force.

2. putting fingers too far into the mouth—frequently in young infants.
3. irritating cough: as in pertussis, acute pharyngitis or laryngitis.
3. *Habitual or chronic vomiting*, usually in children of a neuropathic constitution.

Vomiting, as it occurs at the onset of an acute infectious disease with a sudden rise in temperature, is one of the most frequently met with causes of vomiting in children.

Recurrent, or cyclic, or periodical vomiting occurs in late infancy, usually during second year of life and is characterized by recurring attacks, at irregular intervals, of nausea, persistent vomiting, a variable rise in temperature, absence of pain, the appearance of acetone bodies in the urine and a peculiarly sweet and rather offensive acetone odor of the breath. The vomitus contains mucous, bile and rarely blood. There is usually a history of persistent overfeeding of fat and of stubborn constipation; the bowel movements are often characteristically foul-smelling and pale in color. The child is of a nervous disposition. Each attack may last for several hours or even several days and when the vomiting subsides, the gastrointestinal canal quickly resumes its normal function; food is taken without the slightest discomfort; convalescence is rapid and within a few days the patient is fully recovered. If, however, the attack is severe or when a very young child is involved the symptoms of true *acidosis* may supervene and the condition of the little patient may become quite alarming; the temperature may go up to 105° or 106°; pulse and respiration, rapid; mouth, dry; abdomen, scaphoid; eyes sunken and the face takes on an anxious expression; constipation or diarrhea is present; emaciation and prostration is rapid and extreme; apathy and drowsiness develop; in the very nervous children convulsions may occur, progressive diminution of urine and concentration of blood; eventually death will occur if the state of acidosis is not checked in time.

The occasional or even more or less regular "spitting" in the presence of a normal gain in weight and general well-being is of little importance. Unless it lasts too long, the spitting becomes habitual, not enough nourishment is retained and the general state of nutrition begins to suffer.

During gastrointestinal disturbances, not so frequent in breast-fed infants, but quite common in bottle-fed infants and children reared in poor hygienic conditions, where, either the feeding formula is wrong, or overfeeding takes place, because the baby is given a bottle any time it cries, or the food is often quantitatively and qualitatively not what it should be, vomiting occurs. Vomiting is an early symptom in these cases, and, if it persists, together with diarrhea, the nutritional state of the child begins to suffer and eventually a state of acidosis develops.

Persistent vomiting shortly after birth, beginning at the second or third week of life, is usually due to hypertrophic stenosis of the pylorus. The vomiting is forcible and projectile in character: is usually in relation to food and most frequently comes directly after feeding, sometimes even while nursing. The quantity vomited may be in excess of the amount of food swallowed during the last feeding, which proves retention of the previous meal. Thus, persistent projectile vomiting, visible peristalsis, the presence of a tumor at the pylorus and food retention, are the characteristic symptoms of this condition. Surgery is the only really effective measure. Pylorospasm is seen in nervous, fretful infants who are hasty feeders; it occurs usually after the 12th week of life. The vomiting is projectile in character; visible peristalsis may be observed, but the pyloric tumor is not a constant finding. This condition responds to dietetic and medicinal measures.

In the case of ingestion of poisons or irritating drugs the vomiting may follow almost immediately and the vomitus may contain blood.

In acute intestinal obstruction and intussusception nausea and vomiting are among the earliest symptoms. Bilious at first, the vomiting soon becomes fecal in character; there is pain, tenesmus and distention; the stools contain blood and mucus; a sausage-like tumor may be felt in the abdomen.

In acute appendicitis nausea and vomiting is one of the early symptoms. It occurs only once or twice but starts up again and keeps up after the appendix has ruptured and peritonitis has set in.

Cerebral irritation (meningismus) and increased intracranial pressure will cause intractable, forcible and projectile vomiting. Increased pressure on the vomiting center is the underlying

cause for its occurrence. It may have no relation to meals.

In pertussis, vomiting with the paroxysms of cough is very distressing and may produce a state of severe malnutrition, particularly in infants, thus reducing the general resistance of the child to an extent that it falls prey to pneumonia or other serious complications.

The treatment of vomiting in children depends upon the cause which, if determined, should be eliminated, if possible, and such measures as seem to be indicated to palliate and relieve the condition.

1. General Measures:

1. The baby should be subjected to a minimum of handling.

2. The baby should preferably be fed in bed in a recumbent position, not flat, with head and shoulders elevated to allow air swallowed to collect at the cardiac end of the stomach; if necessary, placing baby in an upright position with its abdomen over your shoulder will cause the swallowed air to be expelled.

3. Splinting the arms will prevent the baby from putting its fingers into its mouth.

4. Plenty of light, fresh air and quiet surroundings.

5. Keep body warm by application of external heat.

6. Watch weight-curve by weighing the baby before and after feeding, also after vomiting.

7. Watch for appearance of so-called "hunger-stool" consisting of a brownish, stringy mucus with little or no food residue.

2. Dietetic Measures:

In the case of "spitting" reduce the amount of food either by shortening the time of nursing or the amount at each feeding, or by prolonging the intervals between feedings. According to the indication in each individual case the formula may be modified by: reducing the amount of sugar, reducing the amount of fat, by using either skimmed milk, buttermilk, dried or evaporated milk; reducing the amount of casein or breaking up the curd either by dilution of the raw milk, boiling or alkalizing the milk, pre-coagulation of the milk with lactic acid or renin.

In some cases of bottle-fed infants the substitution of human milk for cow's milk may become necessary.

In every case of vomiting cod-liver oil should be discontinued until the child is normal again.

Temporary starvation, from 12 to 24 hours,

may be instituted except in very young infants, and particularly in the premature it should never be employed as it may affect them in a very serious manner. If ordinary measures of shortening of intervals and reducing the amount of food does not accomplish the desired results, rather than to institute a starvation diet it is preferable to empty the stomach by careful lavage, using a weak sodium bicarbonate or saline solution, and before withdrawing the catheter placing a small feeding of human milk into the stomach. During the starvation period small quantities of carbonated or peppermint water, or weak tea sweetened with a little saccharin, or a dilute alkaline solution (one drachm of sod. bicarb. to the pint of water), to which one teaspoonful of glucose may be added for every three ounces of solution, should be given at frequent intervals either with a spoon or by bottle. Even if some of the liquid is vomited out, still a portion of it will remain in the stomach.

In acute disturbances of the gastrointestinal tract after a temporary starvation period, the diet should at first consist of diluted skimmed milk, whey, buttermilk, beef broth and zwieback. All fruits, vegetables, sweets, pastry and candy should be prohibited. With improvement of the symptoms vegetables (mashed), cooked fruits, soft boiled egg, meat (chopped), as well as starchy foods may be added gradually.

In mild cases of hypertrophic pyloric stenosis small and frequent feedings should be tried first, before surgery is resorted to. The same procedure should be employed in cases of pylorospasm and habitual vomiting, but in these cases food that cannot be easily regurgitated—"thick-feeding"—should be given, e. g., food prepared of four tablespoonfuls of barley—flour cooked for 30 minutes in one pint of whole milk, and of that one or two ounces are given every three or four hours with a spoon or a nipple that has a large opening.

3. Medical Measures:

To combat dehydration:

Normal saline solution, subcutaneously, or intravenously (jugular vein): into the longitudinal sinus if fontanel is still open; intraperitoneally—giving 100 to 200 cc. and if toxemia is profound add one to three minims of 1:1000 adrenalin solution. Small bits of cracked ice to swallow.

In gastrointestinal disturbances it may be ad-

visible to give a mild cathartic in the form of milk of magnesia in one drachm doses every half hour, until four to eight doses are given.

Stomach lavage, when vomiting is severe, using plain tepid, boiled water, or a weak alkaline solution. At first, once or twice a day; later, every second or third day.

Enema—using a mild alkaline (1 per cent. sod. bicarb.) solution and repeated until returns are clear, using six to eight ounces of the solution each time. Suppositories may be used in infants.

In pylorospasm: Atropine in 1/500 to 1/400 grs. doses, 15 minutes before feeding and also chloral hydrate in 1/2 to 1 gr. doses, as necessary, allowing not more than about 5 grs. in 24 hours. Bismuth subcarbonate: in about 5 grs. doses every two hours in older children. Morphine: hypodermically (dose, according to age and weight) and repeat every six or eight hours, if necessary.

4. *Surgical Measures:* As is indicated whenever a positive diagnosis of a surgical condition is made, as e. g., in hypertrophic pyloric stenosis, intestinal obstruction, appendicitis, etc. In all these cases care must be exercised to combat the dehydration and toxemia before a general anesthetic is administered.

2753 W. North Ave.

VITAMIN B1 IN RELATION TO VISUAL RECEPTION

EDOUARD POSER, M. D.

CHICAGO

Miss A. C. W., 4, 20, 1938; 53 years of age, complained of poor vision and dizziness on looking down and to either side, also intermittent pain in the left eye. These symptoms had been noticeable for the past six months, sometimes increasing in intensity, sometimes diminishing. She also believed she had diplopia when right eye was closed. Family, medical, surgical and menstrual histories are negative. Previous illnesses consisted of measles, diphtheria and scarlet fever when a child.

Accidents—At 27 years of age patient fell off a street car and was not visibly injured. However, the fall was followed by epileptic seizures, which had entirely abated (she states, with barbiturate therapy) the past four years.

Habits—Very regular. No alcohol, tobacco or other drugs except the barbiturate already mentioned.

Diet—Usual breakfast: 1 orange, 1 egg, toast and coffee; usual lunch; stewed vegetable; usual dinner: repetition of lunch. Eats very little butter. One cup of tea before retiring at night.

Systems: Ears, nose, throat, respiratory, digestive, genito-urinary and nervous systems essentially negative. Teeth extracted, sinuses clear.

Circulatory system—Negative at this time. However, one year ago she was troubled with swelling of the ankles which subsided spontaneously. Blood pressure 140/70 mm. arm; 180/100 mm. leg. Pulse 72.

Eye examination: Eyes possessed a frozen stare. Vision right eye 20-200; left eye 20-200. Correction—slightly hyperopic which did not influence the vision to any great extent. Pupils unequal. Left dilated slightly more than the right. Both reacted sluggishly to light and accommodation. Examination under a mydriatic: Pupils dilate equally and well. Nerve head is well defined, presenting no cupping or protrusion and with physiological excavation of average size and depth. Vessels—veins slightly tortuous. Arteries—central white line present over two-thirds course; no excessive tortuosity or no compression noted. Maculae clear and remainder of fundus normal. Media—lens, iris and cornea negative.

Tactile Tension—equal and within normal limits. Muscles—No paresis or paralysis.

Color Vision—with Ishihara chart is normal. Fields—fields of vision as demarcated with a 3 mm. white disc on the tangent curtain were contracted to approximately ten degrees, the left slightly more so than the right. The contraction was concentric and equal.

X-ray examination was rejected by the patient.

Blood examination:

Red blood count.....	4,650,000
White blood count.....	7,300
Hemoglobin	92%

	mg. %
Urea nitrogen	17.5
Sugar	100
Uric Acid	3.3
CO ² combining power.....	64 vol. %
Chlorides	495
Inorganic phosphorus	3.6
Serum calcium	11.6

Kahn Test—negative.

Urine—essentially negative.

Treatment:

4-20-38. 100 mg. of Vitamin B1, parenterally.

4-25-38. Patient states that vision is better to the side and down. Has developed slight cold. 100 mg. of Vitamin B1, parenterally.

4-28-38. Vision right eye 20-40; left eye 20-20. No dizziness or pain in left eye. Pupils are equal and react well to light. Field of vision on tangent curtain, using a 3 mm. white disc, is normal. Patient refused further treatment for the reason that she considered herself well.

COMMENT

Various experiments on animals by different investigators have fairly well proven that Vitamin B1 deficiency evokes perivascular hemorrhages about the vestibular nuclei before peripheral nerves or receptors are affected. Disturbed

functions such as nystagmus, bradycardia, changes in muscle tone, ataxia and increased excitability accompany metabolic defects, and precede anatomic degeneration, hence the missing factor can restore practically normal function within 2 to 24 hours. The deficiency leads to an accumulation of pyruvate, while a sudden large excess will result in a catatorulin effect.

According to L. J. Harris, P. C. Leong and C. C. Ungley, a resting level of excretion of B1 in the urine comprises from 10 to 20 I. U. per day. After a standard test dose of 350 I. U. a normal individual should excrete 30 I. U. more than the level. Resting levels of less than 10 I. U. and an elevation of only 15 I. U. after the test dose is subnormal.

CONCLUSION

This case is that of a 53 year old woman, affected by dizziness, diplopia, pain the left eye and a contraction of the fields of vision of six months duration. Her diet is particularly noticeable because of its major restriction. Notwithstanding, she did not have the usual clinical signs of vitamin deficiency such as cramps, nyctalopia and others that might well be expected.

Other eye examinations and treatment elsewhere had produced no positive results. After 200 mg. of Vitamin B1 the above noticed symptoms have disappeared.

8 So. Michigan Avenue.

COLLECTIVE GUINEA PIG

Representative Hatton W. Sumners ad libbing to his fellow members of the Monopoly Committee:

Doctors will try out a new idea on a guinea pig first and they will be pretty cautious. We in government are not. There are people connected with government who want to try the whole idea on the government first, and then if it won't work, try it on the guinea pig. Then they expect a diploma because it didn't make the guinea pig sick.—*Nation's Business*.

Marriages

GERALD A. HANCUR to Miss Virginia Guido, both of Cicero, Ill., Nov. 26, 1938.

LADISLAUS JOHN KUNSCH, Naperville, Ill., to Miss June McNeeney of West Chicago, Oct. 1, 1938.

OLIVER S. ORMSBY to Miss Mary Horton, both of Chicago, in Louisville, Ky., February 4.

JOHN F. SHIRONT, Woodstock, Ill., to Miss

Olive C. Hosman of Omaha, Neb., in November, 1938.

FREDERICK W. SIEGERT, Pana, Ill., to Miss Anne Arpe of St. Louis, Oct. 27, 1938.

Personals

Dr. Fred O. Tonnev, for years director of the municipal laboratory, Health Department, city of Chicago, is at present connected with the National Food and Drug Enforcement Department, Washington, D. C. Chicago's loss is the government's gain. No more competent official could be found to direct enforcement of the Food and Drug Act than Dr. Tonnev. His official title is Medical Officer, Federal Trade Commission.

Dr. Ethan Allen Gray, formerly of Chicago, for years medical director, Chicago Fresh Air Hospital, attending physician, Augustana Hospital, and for two or more decades active in tuberculosis work in his native city, has retired from practice and is making his home in Winter Park, Florida.

Last month in a Florida city near Winter Park, there was staged an open meeting by the advocates of Compulsory Health Insurance and Tax Supported Medicine. Dr. Gray attended the meeting and debated the question from the viewpoint of the doctor and the public. His clear presentation of the hazards connected with such a setup convinced the lay audience that such a scheme is undesirable as a means of rendering medical care for the people of America.

Dr. Edward H. Ochsner and Mrs. Ochsner are enjoying a winter vacation in Hawaii. They found the trip quite enjoyable and have seen and heard much that is of interest both from a layman's and a scientist viewpoint.

Dr. M. H. Kronenberg, Chief, Division of Industrial Hygiene, Illinois State Department of Public Health, will address the Industrial Nurses Association on Thursday evening, March 9, 1939. His paper will be entitled "The Industrial Nurse in an Industrial Hygiene Program."

Dr. Herman M. Soloway, Venereal Control Officer of the State of Illinois addressed the Morgan County Medical Society at Jacksonville on "The Management of Syphilis," February 9.

Dr. N. C. Gilbert addressed the DeWitt County Medical Society, February 20, on "Heart Disease."

Dr. Robert H. Herbst was the guest speaker in Urology at the annual meeting of the New Orleans Graduate Medical Assembly, held in New Orleans February 6, 7, 8 and 9.

Dr. Frederick Falls gave a talk on the importance of Prenatal Care before a lay meeting sponsored by the McLean County Medical Society at Bloomington on February 15.

Dr. A. R. Hollender, formerly located in Chicago, announces the opening of offices in Miami Beach, Florida, in the Lincoln-Drexel Building.

Dr. Eugene T. McEnery addressed the DeKalb County Medical Society at Sycamore, January 19, on "Respiratory Diseases in Children."

Dr. Carolyn MacDonald addressed the Woman's Club of Clearing, February 21, on the subject "After Forty, What?"

Dr. J. R. Ballinger addressed the Peoria City Medical Society, February 7.

Dr. C. R. G. Forrester was invited to give a paper on "Fractures" before the Kankakee County Medical Society, February 9.

Dr. Arthur Abt addressed the Will-Grundy County Medical Society at Joliet on "Injuries of the New Born," February 10.

Dr. James G. Carr presented a program on "Heart Disease" before Knox County Medical Society, February 21.

Dr. Harold C. Voris addressed the Henry County Medical Society, February 23, on "Brain Injuries."

Dr. James T. Case addressed the Will-Grundy County Medical Society, February 24 on the subject "A Brief Summary of the Rationale and Indications of X-Ray and Radium Therapy."

Dr. Florian Schmidt will present a program on Pneumonia at the February 16 meeting of the McHenry County Medical Society. He will share the program with H. A. Lindberg.

Dr. M. Herbert Barker and Paul S. Rhoads will present a program on "Pneumonia" at the February 16 meeting of the Sangamon County Medical Society.

Dr. Aaron Arkin discussed "The Differential Diagnosis of Organic Heart Disease" before the Will-Grundy County Medical Society, February 17.

Dr. G. Henry Mundt addressed the lay meeting of the Sangamon County Medical Society at Springfield, February 13, on "Socialized Medicine."

Dr. Paul H. Harmon, Sam Banks and Edward L. Compere addressed a joint meeting of the faculty of the University of Mississippi and the Northern Mississippi Medical Society at the University of Mississippi, Oxford, January 19, on "Suppurative Arthritis of the Hip," "The Intervertebral Destruction in Relation to Back Pain," and "Methods of Treatment for Fractures of the Neck of the Femur," respectively.

Dr. O. T. Roberg, head of the Swedish Covenant Hospital, in Chicago, sailed February 4 on the Steamship Lelsud, of the Delta Line (Mississippi Shipping Company) on a three months' vacation trip to Buenos Aires, Rio de Janeiro and other points on the east coast of South America.

The Will-Grundy County Medical Society was addressed at Joliet, January 18, by Dr. Robert B. Malcolm, Chicago, on hernia.

At a meeting of the McHenry County Medical Society in Woodstock, January 19, Dr. Philip H. Schneider, Evanston, spoke on "Toxemias of Pregnancy."

Dr. John A. Bigler, Highland Park, addressed the Ogle County Medical Society, January 19, on "Use of Sulfanilamide in Pediatric Practice."

Dr. Willard Van Hazel discussed "Treatment of Empyema" before the Kankakee County Medical Society in Kankakee, January 12.

Dr. Delmas K. Kitchen, Detroit, discussed "Diagnosis and Treatment of Gonadal Immaturity" before the Peoria City Medical Society, January 17.

At a meeting of the Madison County Medical Society in Alton, January 6, Dr. August A. Werner, St. Louis, spoke on the menopause.

At a meeting of the Englewood Branch, February 7, Dr. Bernard Fantus spoke on "Sulfanilamide in Coccal Infections."

Dr. Fred M. Smith, Iowa City, discussed "Diagnosis and Treatment of Coronary Occlusion with Particular Reference to Atypical Forms" before the North Shore, Branch, February 7.

Dr. Frederick W. Fitz, Chicago, addressed the Rock Island County Medical Society in Moline, January 10, on "Heart Disease in Relation to Certain Manifestations of Nephritis."

The North Side Branch was addressed, February 2, by Drs. Rudolf Schindler on "Gastroscopic Studies of Diseases of the Stomach" and Walter L. Palmer, "Clinical Course and Therapy of Gastric and Duodenal Ulcer."

The Chicago Gynecological Society was addressed January 20, by Drs. William J. Dieckmann and Ira Brown on "The Obstetric Management of Pregnancy Toxemia" and Charles E. Galloway and Tom D. Paul, Evanston, Ill., "Treatment of Early Abortions."

At a meeting of the Chicago Society of Internal Medicine, January 23, the speakers included Dr. Frederick T. Jung and B. L. Isaacs on "Measurement of Vitamin A Deficiency in Man" and Dr. John Ashworth, C. J. Farmer, M. A., and Dr. Don C. Sutton, "Observations on Vitamin C."

Dr. Elexions T. Bell, professor of pathology, University of Minnesota Medical School, Minneapolis, presented the fifteenth Ludvig Hektoen Lecture of the Frank Billings Foundation at the Palmer House, February 24. He discussed "The Pathogenesis of Glomerulonephritis Including Lipoid Nephrosis."

Drs. George L. Apfelbach addressed the Evanston Branch of the Chicago Medical Society, February 2, on "Fractures of the Neck of the Femur—Causes of Nonunion"; Edmund F. Foley, "Cirrhosis of the Liver," and Thomas C. Galloway and Eustace L. Benjamin, Evanston, Ill., "Acute Tracheobronchitis."

News Notes

—The special postgraduate course on Syphilis recently announced by University of Illinois College of Medicine will not begin till April 4, on account of the prevalence of influenza.

—The Morgan County Medical Society recently sponsored an exhibit of more than 2,000 pictures of physicians and surgeons at the David Strawn Art Home, Jacksonville. The display also included about 1,000 pictures of medical subjects, such as monuments and hospitals. The entire collection is the property of Dr. Carl E. Black.

—The St. Joseph Clinical Society will hold its eighth annual two-day spring clinic on March 28 and 29, at St. Joseph, Mo.

—A quarantine was placed on Concordia Teachers College, River Forest, January 31, on account of three cases of scarlet fever among the students; twelve students were under observation.

—The first Southern Illinois Regional Conference was held on Harrisburg, January 17-19, under the auspices of the state department of health. The conference was one of a series now

being held in districts throughout the state. Mediums of reaching the public include health exhibits, talks and motion pictures. The first conference was held in Aurora in the fifth district, which embraces seventeen counties. A similar assembly convened in the tenth district, including Logan, Mason, Cass, Menard and Sangamon counties.

—The department of dermatology in the University of Illinois College of Medicine, cooperating with other departments, will conduct a graduate course in syphilis in the Research and Educational Hospital, 1819 West Polk Street, beginning Feb. 27. The course, offered under a grant from the federal government with the approval of the state department of public health, will run eight weeks and consist of lectures, laboratory demonstrations and the presentation of hospital and dispensary clinical material designed to present to the practitioner a review of the subject and discussion of recent developments in this field. The course will be repeated four times a year. Applications together with a check covering the registration fee of \$10, made payable to the University of Illinois, should be sent to the examiner and recorder at 1853 West Polk Street.

—At the annual meeting of the Chicago Dermatological Society held January 18, the following officers were elected: President, Edward A. Oliver; Vice-president, Frederick R. Schmidt; Secretary-Treasurer, Herbert Rattner.

—The mortality of appendicitis was discussed in a symposium before the Chicago Medical Society, February 1; the speakers were Drs. David E. W. Wenstrand, medical director, Northwestern Mutual Life Insurance Company, Milwaukee; LeRoy H. Sloan, professor of medicine, University of Illinois College of Medicine, and Vernon C. David, clinical professor of surgery, Rush Medical College. Dr. Byrl R. Kirklin, Rochester, Minn., addressed a joint meeting of the society and the Chicago Roentgen Society January 18 on "The Value of Roentgen Diagnosis as It Pertains to the Physician in General Practice," and Dr. Bernard P. Widmann, Philadelphia, "X-Ray, Radium and Cancer." The Chicago Medical Society sponsored a public lecture at the Chicago Woman's Club February 8 with Dr. Francis E. Seneor, professor of dermatology, University of Illinois College of Medi-

cine, as the speaker; his subject was "Preserving Your Complexion."

—Because of the increased prevalence of tularemia in Illinois during the past season, the state conservation department's plan to move 5,000 rabbits from the southern counties to farm lands and marshes in the northern part has been abandoned. More than thirty-eight deaths from tularemia were reported in the state during the past year and 489 cases of the disease have been recorded since Jan. 1, 1938, newspapers announced January 19.

—Dr. Robert S. Stone, professor of radiology, University of California Medical School, San Francisco, delivered the first two lectures of the Educational Association on Cancer Lectureship Fund, February 15-16, in room P 117, Billings Hospital. His subjects will be "The Position of Supervoltage in the Treatment of Cancer with X-Rays" and "Theoretical and Practical Considerations Concerning Fast Neutrons in the Treatment of Cancer." The lectureship is financed by the Education Association on Cancer through the committee on cancer of the University of Chicago. The committee was established in August, 1938, and represents various departments in the university.

—There were 1,744 patients seen in the sixty clinics for crippled children held in thirty different sites in Illinois in the fiscal year 1937-1938, according to a recent report of the division for handicapped children, state department of public welfare. Of 783 patients recommended for hospital care, 45.6 per cent were hospitalized during the fiscal year, while the majority of the group had been hospitalized by Dec. 1, 1938. A program of consultation on poliomyelitis was initiated and was in operation during the summer of 1938 in the entire state except within the city limits of Chicago, where other agencies covered the field. All the sporadic cases of poliomyelitis of 1938 that needed hospital care were sent to hospitals. There were but twenty-five bona fide cases during the summer. The field nurses of the division for handicapped children made 10,410 visits during the year and 51,960 days of hospital care were provided to crippled children by the department of public welfare; of these children 8,426 were in the wards of the general hospitals of the state, where orthopedic surgeons are cooperating in the plan for this care with the division for handicapped

children. Appliances were furnished to patients attending the clinics in the following numbers: braces 138, artificial limbs 39, and orthopedic shoes and shoe corrections 184.

Deaths

WILSON RUFFIN ABBOTT, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; members of the Illinois State Medical Society; at one time connected with the U. S. Public Health Service, and director of the U. S. Veterans' Bureau Hospital, number 55, Fort Bayard, N. M.; aged 65; died, Dec. 5, 1938.

ANNA M. BRAUNWARTH, Chicago; Woman's Medical College, Chicago, 1886; an Affiliate Fellow of the American Medical Association; at one time medical superintendent of the Post Graduate Hospital; aged 81; was killed, Dec. 19, 1938, when struck by a bus.

JOSEPH ALONZO PETERSON, Oak Park, Ill.; Chicago College of Medicine and Surgery, 1908; aged 63; died, Nov. 4, 1938, in a hospital at Chicago of cerebral hemorrhage and acute nephritis.

CHARLES WALLACE POORMAN, Oak Park, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, a Fellow, A. M. A., 1903; on the staff of the West Suburban Hospital; aged 65; died, Nov. 13, 1938, of coronary and cerebral sclerosis.

SAMUEL M. ROSENBLUM, Chicago; Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin, Prussia, 1890; aged 62; died, Nov. 25, 1938, in the Michael Reese Hospital of coronary sclerosis and bronchopneumonia.

EUGENE E. SHUTTERLY, Evanston, Ill.; Hahnemann Medical College and Hospital, Chicago, 1888; served as health officer of Evanston on a part time basis during the year 1898; member of the first staff of the Evanston Hospital; aged 77, died, Nov. 2, 1938, of coronary thrombosis and arteriosclerosis.

DAVID CHARLES SIMON, Chicago; University of Illinois College of Medicine, Chicago, 1930; assistant in the department of medicine, University of Illinois College of Medicine, June 13, 1932-Sept. 1, 1938; aged 34; died, Nov. 17, 1938, of sarcoma of the mediastinum with metastasis.

TIMOTHY JOHN THURSTON, Chicago; Dearborn Medical College, Chicago, 1907; aged 69; died, Nov. 7, 1938, of endocarditis, diabetes mellitus and chronic nephritis.

OTTO G. WASKOW, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; aged 62; died, Nov. 16, 1938.

AUSTIN L. WRAY, Rock Island, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; aged 86; died, Nov. 4, 1938, of an infection which developed in an abrasion.

WILLIS TERRY ZEIGLER, Canton, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1896; member of the Illinois State Medical Society; formerly county coroner; aged 71; on the staff of the Graham Hospital, where he died, Nov. 25, 1938.



If they could talk,
Council Seals
would say:



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The Land of the Setting Sun

At the time of the menopause a woman figuratively faces the land of the setting sun. Very often the question of graceful middle age and old age can be decided by the effectiveness of control over menopausal symptoms. Notwithstanding the fact that the menopausal syndrome occurs in about 85 percent of otherwise normal women its discomforts need no longer be accepted as a natural intractable concomitant of that troublesome period of readjustment. The most rational and effective approach is through estrogenic hormones.

The following are the packages of Roche-Organon standardized estrogenic hormones: MENFORMON—Ampuls, 1000 International Units, cartons of 6 and 50, and 5000 International Units, cartons of 3, 6, and 50; 5-cc vials of solution, 10,000 and 50,000 International Units; tablets, 1000 International Units, bottles of 25, 100, and 250, and 10,000 International Units, bottles of 25 and 100. DIMENFORMON—Tablets, 500 Rat Units, bottles of 30, 60, and 250, and 2000 Rat Units, bottles of 30 and 250; 10-cc vials of solution, 1 cc = 0.1 mg. DIMENFORMON BENZOATE—Ampuls, 1000 Rat Units, cartons of 6 and 100, 2000 Rat Units, cartons of 3, 6, and 100, and 10,000 Rat Units, cartons of 5. ROCHE-ORGANON, Inc. • Roche Park • Nutley, New Jersey.



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BUYERS INDEX

ABDOMINAL SUPPORTERS

S. H. Camp & Co., Jackson, Mich..... 7

FOODS

Coca-Cola Co., Atlanta, Ga..... 7
 Corn Products Refining Co., New York City..... 7
 R. B. Davis Co., Hoboken, N. J..... 11
 Knox Gelatine Laboratories, Johnstown, N. Y..... 11
 Mead, Johnson & Co., Evansville, Ind..... 17
 S. M. A. Corporation, Cleveland..... 7

FINANCIAL AND INSURANCE

Employers Mutuals, Wausan, Wis..... 12
 Medical Protective Co., Fort Wayne, Ind..... 26
 Physicians Casualty Co., Omaha, Neb..... 27

HOSPITALS

Stokes Hospital, Louisville, Ky..... 23
 Summit Hospital, Oconomowoc, Wis..... 24

INSTITUTE

Chicago Tumor Institute, 21 West Elm St..... 27

PHARMACEUTICALS

Alba Pharmaceutical Co., 80 Varick St., New York City... 12
 American Agency, French Vichy, Brooklyn, N. Y..... 12
 American Can Co., 230 Park Ave., New York City..... 3
 Armour & Co., Chicago..... 12
 Ernst Bischoff, Ivoryton, Conn..... 12
 Bovinine Company, Chicago..... 12
 Bristol-Myers Co., New York..... 6
 Carnrick, G. W., Co., 20 Mt. Pleasant Ave., Newark, N. J. 24
 Chemico Laboratories, Indianapolis, Ind..... 27
 Ciba Company, Cedar and Washington St., New York City 26
 Crookes Laboratories, New York City..... 12
 Denver Chemical Co..... 29
 E. Fougera & Co..... 12
 Gold Pharmacal Co., New York City 24
 Harrower Laboratory 25
 Hoffman-LaRoche, Inc., Nutley, N. J..... 2
 Hynson, Westcott & Dunning, Charles and Chase Sts.,
 Baltimore 13

Lederle Laboratories, 30 Rockefeller Plaza, New York... 30, 31
 Lilly, Eli, & Co., Indianapolis, Ind..... 16
 Morris, Philip, & Co., 19 Fifth Ave., New York..... 15
 Nutrition Research Laboratories, 332 S. Michigan Ave.,
 Chicago 10
 Parke, Davis & Co., Detroit, Mich..... 5
 Petrolagar Laboratories, 8134 McCormick Blvd., Chicago.. 4
 Reed & Carnrick, Jersey City, N. J..... 12
 Roche Organon, Inc., Nutley, N. J..... 18
 Schering & Glatz, Inc., New York City..... 12
 G. D. Searle & Co., 4737 Ravenswood Ave. Chicago..... 8
 Sharp & Dohme, 111 N. Canal St., Chicago..... 12
 E. R. Squibb & Sons, New York..... 9
 Frederick Stearns & Sons, New York..... 12
 Wm. R. Warner & Co., 113 W. 118th St., New York City 14
 Winthrop Chemical Co., 170 Varick St., New York City... 12
 Zemmer Co., Pittsburgh, Pa..... 21

SANATORIA AND SANITARIA

Edward Sanatorium, Naperville, Ill..... 25
 Kenilworth Sanitarium, Kenilworth, Ill..... 21
 Michell Farm Sanatorium, Peoria, Ill..... 32
 Milwaukee Sanitarium, Wauwatosa, Wis..... Front Cover
 Norbury Sanitarium, Jacksonville, Ill..... 21
 North Shore Health Resort, Winnetka..... 25
 Rogers Memorial Sanitarium, Oconomowoc, Wis..... 32
 Waukesha Springs Sanitarium, Waukesha, Wis..... 21
 Weirick's Sanitarium, Elgin, Ill..... 23

RADIUM

Physicians Radium Assn., 55 E. Washington St., Chicago.. 23

SURGICAL SUPPLIES

Baum Co., New York..... 12
 General Electric X-Ray Corp., 2012 W. Jackson Blvd.,
 Chicago 12

NO NEED TO WORRY OVER CANCER FROM A BLOW

Most laymen and women—especially women—have worried over the possibility of cancer arising from a blow or other injury they have sustained. Or if cancer has developed, the patient or his friends and relatives are more than likely to ascribe it to a recent injury.

Such fears are groundless, in the opinion of leading cancer authorities. Dr. George T. Pack, of The Memorial Hospital for Cancer and Allied Diseases, New York City, explained why in a recent report to the American Society for the Control of Cancer.

Cancer of the breast, he pointed out, is most frequently considered by the laity to be caused by an injury. This is natural because of the susceptibility of the breast to injury. However, the number of cases which can be fairly said to have originated in injury is "much too small to carry weight," Dr. Pack said. The same is true for cancer of the bone. The number of cases in which injury could possibly be accepted as the cause is so small as to make it "impossible to accept this theory of origin. In only one of the 8 common varieties of bone sarcoma," Dr. Pack continued, "does trauma or injury have a possible influence."

He added further that none of the available evidence bears out the lay fear that cancer of the internal organs can be attributed to injury, or trauma, to use the medical term.

"Perhaps the best way to set the minds of the public at rest," Dr. Pack stated, "is to consult the records of the World War. Surely the trauma was great enough and frequent enough and if it could cause cancer, there should be evidence to support or else deny the claim. It is encouraging to discover that the percentage of tumors among war veterans is no greater than among the civilian population and that there has been no significant increase in the incidence of tumors since the war."—*Science News Letter*.

SCREEN DISTORTION

We have witnessed in silence the garbling of many of our favorite stories in their screen versions. But when M-G-M makes Dr. Manson in "The Citadel" into a convert for group medicine as the term is used in this country, we rise to object. And when the movie critic of a New York newspaper goes farther and writes of Dr. Manson making a speech for socialized medicine, mild objection turns to vocal revolt.

In "The Citadel" Dr. Cronin, the author, brilliantly exposed the fallacy in Great Britain's panel system of socialized medicine. He shows how an honest panel doctor is penalized because he loses his patients to the doctor who finds something to prescribe for—usually that which the patient wants him to find. The system is duck-soup for the malingerer and the hypochondriac.

And when the author alluded favorably to "group medicine" he clearly had in mind not a cooperative scheme of health insurance but merely a grouping of several specialists in one clinic.—*Nation's Business*.

TEN GOLDEN RULES OF THE CANCER EXAMINATION

1. Examine the lips, tongue, cheeks, tonsils, and pharynx for persistent ulcerations, the larynx for hoarseness and the lungs for persistent cough.
2. Examine the skin of the face, body, and extremities for scaly, bleeding warts, black moles and unhealed scars.
3. Examine every woman's breast for lumps or bleeding nipples.
4. Examine the subcutaneous tissues for lumps on the arms, legs, or body.
5. Investigate any symptoms of persistent indigestion or difficulty in swallowing. Palpate the abdomen.
6. Examine the lymphode system for enlargement of the nodes of the neck, axilla, or groin.
7. Examine the uterus for enlargement, lacerations, bleeding, or new growth. Make a bimanual examination to determine the condition of the ovaries.
8. Examine the rectum, and determine the cause of any bleeding or pain.
9. Examine the urine microscopically for blood.
10. Examine the bones and Roentgenograph any bone which is the seat of a boring pain, worse at night.—Frank E. Adair, M. D., Southern Medicine and Surgery, The American Society for the Control of Cancer.

"THE LAW'S DELAYS"

From a Speech by Frank J. Hogan, new president of the American Bar Association

About 560 years before Christ, Solon made reference to the slowness of justice; Horace in the year 24 B. C. announced that justice was still "moving slowly"; Shakespeare in 1601 had Hamlet include "the law's delay" among those things that justified suicide; a third of a century later George Herbert complained that "lawsuits consume time." A century passed during which the changes were rung on this ancient complaint until Bishop Burnet in his "History of His Own Times," in 1723, set it down that "the law of England is the greatest grievance of the nation, very expensive and dilatory." Dickens devoted a volume to the subject, and Walter Savage Landor, in his "Imaginary Conversations," gave us the since overworked phrase "delay of justice is injustice." We are at death grips in America with this age-old problem of government. Progress, gratifying progress, has been made. Let us tighten our hold and go on until the history of our time will record as its great achievement justice, sure and speedy, for all.

Antipneumococcic Serum used more generally for treatment of pneumonia would mean a saving of approximately 50,000 lives annually in this country.—Sturgis, C., *Wisconsin M. J.* 37:193, 1938.

Lady Interviewer: "Then your knowledge, Dr. M'Tuggen, must cover a very wide field."

Dentist: "Thousands of achers, madam, roughly speaking."—*The Doctor*.

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(Continued on page 23)

(Continued from page 22)

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"Can't git yo' no snow in Alabam', Mandy. Don' yo' know we're a thousand miles from where it grows?"

"Well, Rastus, do yo' all 'member how Mrs. Jones' baby was marked wid strawberries?"

"Yes."

"Well, dat was cuz she had a whim fo' berries an' couldn't git 'em. An' Rastus, yo' all recall the terrible yellar color of the Smith baby? Well, that was cuz she had a whim fo' oranges and couldn't git 'em.

"Now, listen to me, Rastus Johnsing Brown, don't put the blame on me if our next chile is white."

The house guests were assembled with their hosts in the living room after dinner, chatting pleasantly,

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when the five-year-old daughter of the host appeared suddenly in the room, her clothes dripping with water. She could scarcely articulate, so great was her emotion and her parents arose in consternation as she entered.

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CONTENTS—Continued

Standpoint of the Reserve. <i>George de Tarnowsky, M. D., Chicago</i>	269
If War Should Come. <i>Norman L. Sheehy, M. D., Rockford, Ill.</i>	270
The Medical Profession in War? <i>Leonard Applequist, Aurora, Ill.</i>	272
Mumps Complicated by Meningoencephalitis. <i>H. R. Fishback, M. D., and Gordon B. Faulley, M. D., Chicago</i>	273
Malaria, 100 Cases. <i>P. V. Dilts, M. D., Pittsfield, Ill.</i> ..	275
Vomiting in Children. <i>Essay Prilla, M. D., Chicago</i>	277
Vitamin B1 re. Visual Reception. <i>Edouard Poser, M. D., Chicago</i>	280

EDITORIALS

Maintain Relationships	189
Coronary Thrombosis	189
Publicity Stunt?	192
Labor vs. Medicine	193
Physicians Income Tax	193
Medical Economics. <i>E. S. Hamilton</i>	196
Hospital Plan. <i>Major G. Seelig</i>	197
Bills to Defeat	200
Do You Want That Kind of Doctors?	202
Hypocrisy in the Law	203
Vermont Wants No Such Plan	204

CORRESPONDENCE

Licensed in Law and Medicine	204
State Medical Editors Assn.	205
Scientific Exhibit at Rockford	205
Hall of Health	205
Pneumonia Control. <i>A. C. Baxter</i>	205
Veterans Dinner	207
Women's Activities	207
American College of Surgeons	208
St. Joseph Clinic	209
Why Select Hospital?	209
Beauty?	209
Samuel D. Gross Prize	209
American Gopher Assn.	210
Mayo Clinics	210

SOCIETY PROCEEDINGS

Preliminary Program of Annual Meeting	211
Marriages	281
Personals	281
News Notes	283
Deaths	284



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Book Reviews

SURGICAL PATHOLOGY OF THE DISEASES OF THE MOUTH AND JAWS. By Arthur E. Hertzler, M. D. 206 illustrations. Philadelphia, Montreal and London. J. B. Lippincott Company. 1938. Price, \$5.00.

This is the tenth and last volume of the series of monographs of surgical pathology written by Dr. Hertzler. This volume is the result of a wide experience alone the line of the author's specialty. It is up-to-date and should be in the library of every physician and surgeon.

ROENTGEN DIAGNOSIS OF THE EXTREMITIES AND SPINE. ANNALS OF ROENTGENOLOGY. A SERIES OF MONOGRAPHIC ATLASES. VOLUME SEVENTEEN. By Albert B. Ferguson, M. D. New York. Medical Book Department of Harper & Brothers. Paul B. Hoeber, Inc. 1939. Price, \$12.00.

Volume XVII of the Annals of Roentgenology upholds, if he does not surpass, the high standard set by the previous contributions. Probably no other work of this kind has presented the subject in so logical a fashion—by Roentgen features, as does this work. Plentiful cross references obviate the need for wasteful repetition; an unusually clear cut and complete workable index is to be found in this volume.

OH, DOCTOR! MY FEET. By Dudley Mortor, M. D. New York-London. D. Appleton Century Company, Incorporated. 1939. Price \$1.50.

In this work the author, a foremost authority on the feet, gives a wealth of new information about feet and their ailments. The work draws attention of the public to the old inherited regime that dominates the field of foot infirmities. Its criticism of existing conditions where professional and commercial relations are concerned is startling in its frankness. This work should revolutionize the public's ideas of the foot and promote qualified professional supervision and care of its disorders.

SUPERFLUOUS HAIR AND ITS REMOVAL. By A. F. Niemoeller, A. B., M. A., B. S., with a foreword by M. H. Morton, M. D. New York. Harvest House. 1938. Price \$2.00.

The only book of its kind in any language. The work covers everything on the subject. Twenty-one packed-filled chapters. Answers all questions on causes of superfluous hair and permanent methods of removal, etc. Illustrated.

THE PATINET IS THE UNIT OF PRACTICE. By Duane Willard Probst, M. D., Springfield, Illinois; Baltimore, Maryland. Charles E. Thomas, publisher. 1939. \$3.50 post paid.

This work systematizes the author's knowledge of the general principles underlying the practice of medicine and arranges that knowledge in a form that is concise, entertaining and usable for students. Special

emphasis has been placed on the patient as the unit of practice.

SURGICAL TREATMENT OF HAND AND FOREARM INFECTIONS. By A. C. J. Brickel, M. D., with 166 text illustrations and 35 plates including 10 in color. St. Louis. The C. V. Mosby Company. 1939. Price \$7.50.

This volume presented to the medical profession is designed to correlate recent advances in our interpretation of the structure of the hand and forearm with the particular patterns exhibited by surgical infections in those parts and with the rationale of the surgical means employed to cure these infections or to minimize their results.

LATEST WPA JOKE

John, privately employed, meets George and a friend, both of them WPA workers. John extends his hand in greeting, and George extends his, but says, "you shake it, I'm on WPA now." George introduces his friend, who doesn't even extend his hand, saying, "and I'm the foreman of the project."

A SPOTTED "PROF."

Landlady: "A professor formerly occupied this room. He was the inventor of an explosive."

New Roomer: "Ah, I suppose those spots on the ceiling are the explosive?"

Landlady: "No, they are the professor."

—Crucible.

A friend from the South was telling us of the leisure and restfulness of Southern life—"Nobody works, nobody hurries. When we go out for a walk we sit and when the dog chases a cat they both walk."

The following is from the *Chicago Tribune*, Voice of the People column:

Chicago, Sept. 16.—I was interested in Lewis Moore's letter wherein he defines a billion dollars by saying that if a man had started to spend \$1,000 a day in 695 B. C. he would spend the last \$1,000 some time in 1938.

I find that he would still be spending \$1,000 a day for more than 105 years before "going broke," which would not happen until in November, 2043, if he had started the spree on Jan. 1, 695 B. C.

I have provided for a leap year every four years and have, therefore, allowed him on the average an expenditure of \$365,250 per year for 2,737 full years and \$1,000 a day for 310 days in the year 2043, but on the 311th day he would have only \$750 left to throw his past party. It looks as it we need "higher mathematics" when we play with a billion dollars. But why play with a billion when we should be writing and thinking about 37 billion dollars that can't be laughed off, no matter how much we try?—Daniel Anderson.



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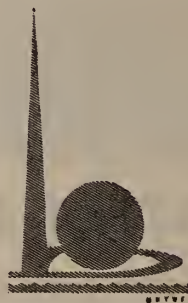
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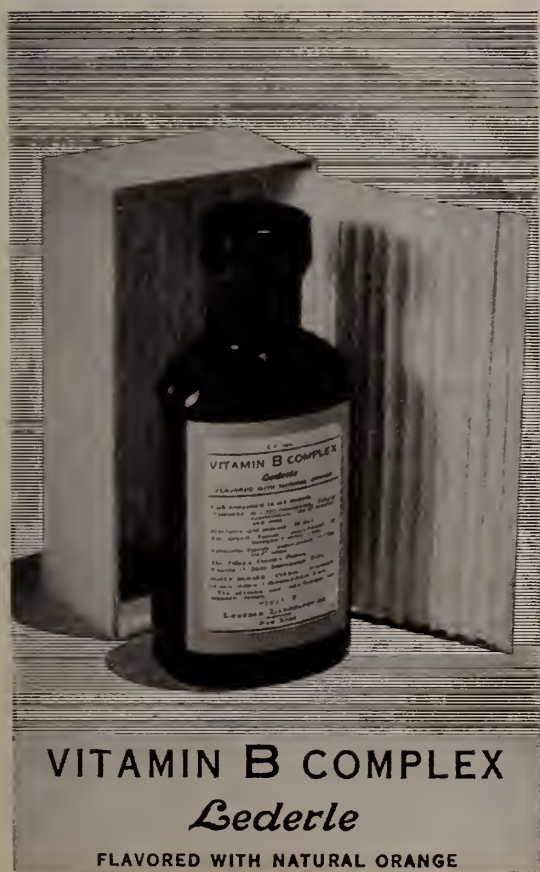
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CONTENTS:

Editorials (For Titles See Extended Table of Contents)	285	President's Address. <i>G. C. Otrich, M. D.</i> , Belleville, Ill.	351
ORIGINAL ARTICLES		Autohemotherapy. <i>Leo Saxon, M. D.</i> , and <i>John E. Stoll, M. D.</i> , Chicago, Ill.	352
Stricture of Lymphogranuloma. <i>Collier F. Martin, M. D.</i> , Philadelphia, and <i>Theo. F. Reuther, M. D.</i> , Chicago	337	Treatment of Psychoses. <i>Beulah Bosselman, M. D.</i> , Chicago, Ill.	355
Menopause and Painful Shoulder. <i>Walter W. Voight, M. D.</i> , Chicago	340	Necrobiosis Lipoidica. <i>Herbert Rattner, M. D.</i> , Chicago, Ill.	359
Lipocalcinogranulomatosis with Recurrent Salivary Calculi. <i>Emil Jonas, M. D.</i> , <i>Andrew Dick, M. D.</i> , and <i>R. E. Forster, M. D.</i> , Chicago.	344	Fundamental Considerations in Psychoneuroses. <i>Meyer Brown, M. D.</i> , Chicago	361
Osteomyelitis re Fusospirochetal Infection. <i>T. Bencdek, M. D.</i> , <i>S. J. Zakon, M. D.</i> , and <i>I. T. Harris, D. D. S.</i> , Chicago	347	Toxicity of Sulfanilamide. <i>M. S. Spellberg, M. D.</i> , Chicago	366
		Trachoma in Illinois. <i>Max Hirschfelder, M. D.</i> , Harrisburg, Ill.	368

(Continued on page 26)

NINETY-NINTH ANNUAL MEETING AT ROCKFORD, MAY 2, 3, 4, 1939

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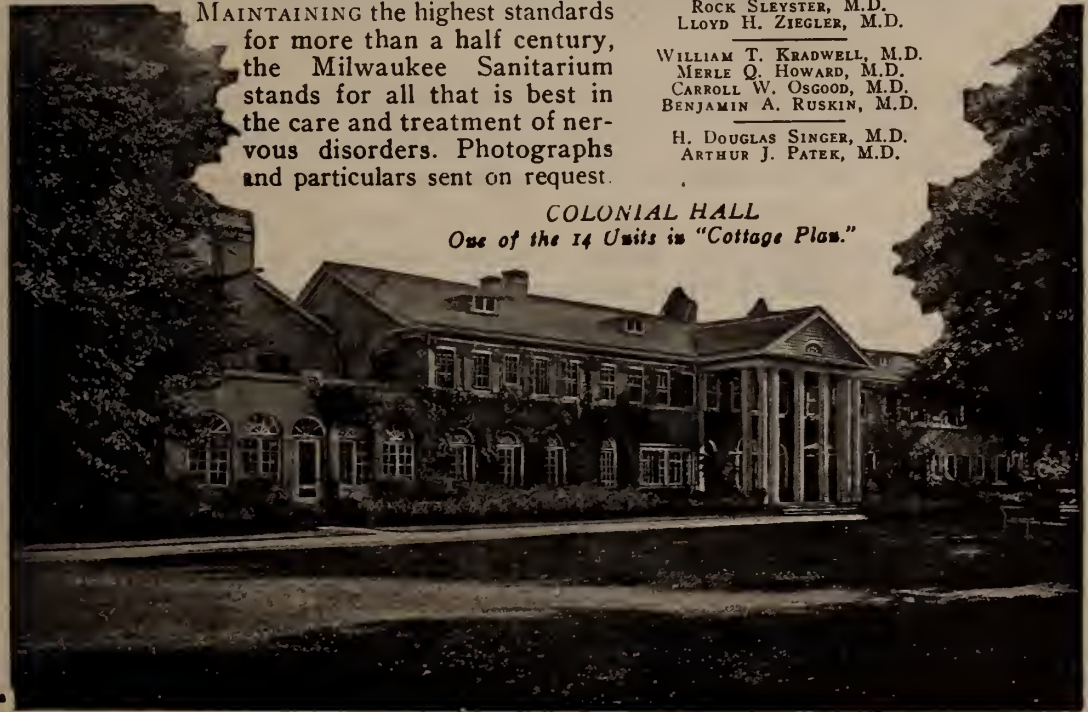
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(1) 1937. Am. J. Digestive Diseases, Nutr. 4, 240.

(2)a. 1933 J. Am. Diet. Assn. 9, 295.
b. 1934. J. Nutrition 8, 449.

(2)c. 1936. Ibid. 12, 405.

d. 1936. J. Am. Diet. Assn. 12, 231.

(3) 1932. J. Pediatrics 1, 749.

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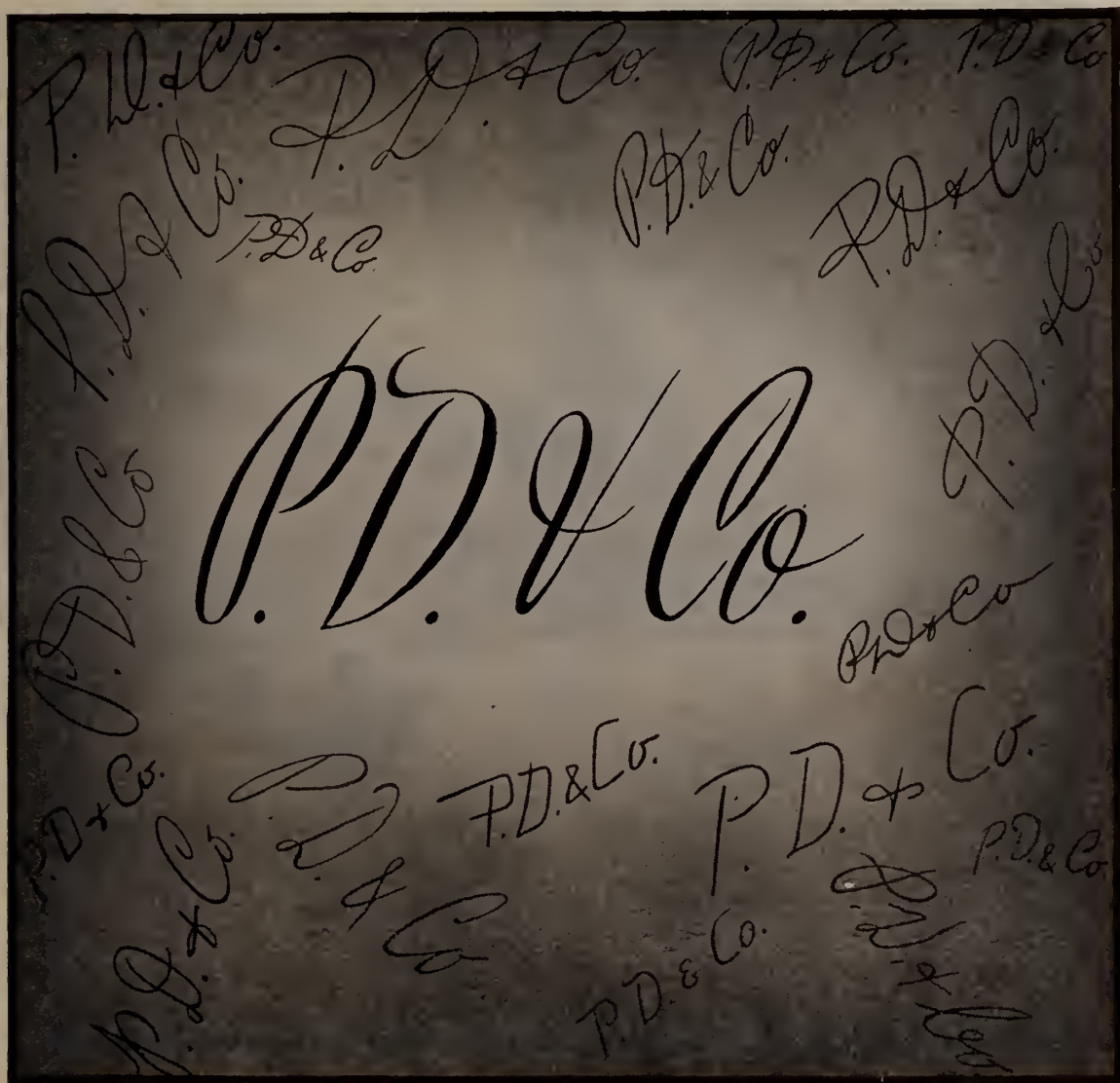


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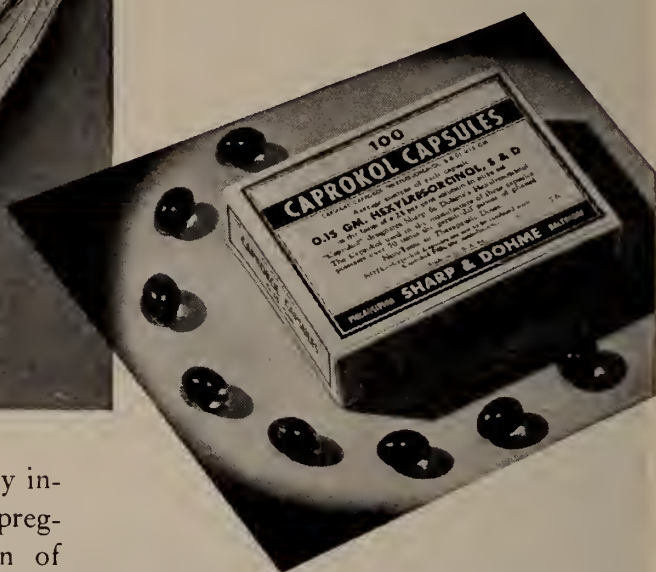
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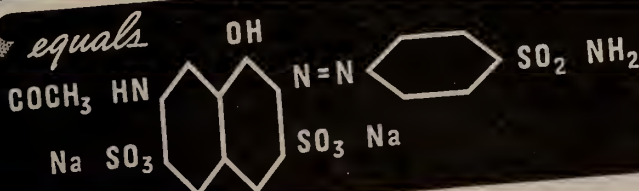
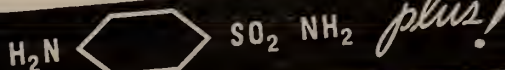
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VOL. 75

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No. 4

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Editorials

ENSLAVE THE MEDICAL PROFESSION TO MAKE A POLITICIANS' HOLIDAY

Organized medicine is progressive in its application of its potentialities to modern needs. It has approved and supported all sorts of group insurance and similar plans, contrary to popular belief, insisting only that the insurance be a matter of cash benefits, payable to the patient, leaving the patient free to choose his own doctor and hospital, instead of a matter of medical care, with any doctor assigned by a government social worker to the job, qualified or not. The ones it has opposed are basically unsound. We resent the attempt to picture medical organizations as "standpat" groups, preserving the status quo at the expense of human welfare.

DECLARES CARE ADEQUATE

"Medical care is certainly adequate in the United States today. No one need go without care and, where there is a shortage, the ignorance of the patient is usually to blame. Doctors contribute free care to the tune of \$1,000,000 a day, the largest contribution made by any agency, including government.

"Lincoln said that America cannot exist half-slave and half-free and I say that America cannot exist with its medical profession enslaved to make a politicians' holiday."

—Morris Fishbein, M. D.

CLARIFYING FEEBLE-MINDEDNESS

The feeble-minded constitute one of the major groups of defectives. Feeble-mindedness is usually defined as the arrest of the mind (for some reason or other), to develop fully to normal maturity. There are all degrees of variation from slight mental abnormality to serious idiotic defects. The degree of defect is usually determined by means of standard intelligence tests. The results are commonly expressed in the terms of Intelligence Quotient or I. Q. which

means the ratio of the mental age to the actual age.

Thus when a child of eight is able to pass only a test that is intended for a child of six, the child is said to possess $6/8$ of normal intelligence or 75% or 75 I. Q. and has a mental age of six. If the child is able to pass a test that is intended for his age, we say that the child possesses a normal mentality or 100 I. Q. However, if a child of eight succeeds in passing a test that is designed for a child of ten, we say that he possesses a mentality of $10/8$ or 125 I. Q. or a mental age of 10. The mature mental age is taken by psychologists as the age of 16, beyond which it is thought there is no further development of innate capabilities of inborn intelligence.

Based on these tests, the feeble-minded are usually classified into:—

1. Idiots, those whose mentality does not advance beyond the mental age of two years, I. Q. 12-15.

2. Imbeciles, those whose mentality does not advance beyond the mental age of four to eight, I. Q. 15-50.

3. Morons, those whose mental age reaches to about the mental age of twelve or 70 I. Q.

The classification is arbitrary for the sake of convenience, but it has no scientific or clinical significance. There are many forms and types of feeble-mindedness differing in etiology, pathological conditions and clinical manifestations, which, however, are grouped together because of having one common symptom, namely,—a low I. Q. For purpose of illustration let us take the cretins and the mongolian idiots. Both types show a very low I. Q., yet, clinically and etiologically, they show different manifestations.

In our present state of knowledge, however, we are unable to recognize and differentiate between all the various types of feeble-mindedness. The I. Q. of 70 is taken by most psychologists as being the dividing line between the normal and pathological. It has been pointed out that a person with an intelligence below 70 I. Q. even though he may be of no actual menace to society, is nevertheless, not fit for home-building because he or she is lacking in intelligence that is required for the providing of a suitable environment for the young.

This view, however, is disputed by many authorities. The main arguments against this view are:—

1. The intelligence tests are not as yet sufficiently reliable and lack in accuracy and therefore, cannot serve as a true criterion as to whether an individual is normal or not.

2. Even if these tests are proven to be reliable, it does not necessarily follow that because a man fails to come up to a certain artificial standard that he should be considered unfit. There is another standard whereby to measure fitness, namely, the social value of man. There are many thousands who are "retarded" or "dull" who can never score above 70 I. Q., but, nevertheless, are healthy, industrious, happy, law-abiding and useful citizens. Many of these possess well-balanced temperamental personalities. They are loyal, pious and appreciate, sometimes to a very high degree, the values of affection and devotion. It is these qualities that count more when considering fitness for the task of home-building and the rearing of children, than high intelligence. True, in urban communities, the dull and retarded may fall prey to exploiters and crooks, but for this they stay blameless. The blame falls on the heads of the exploiters, who are the real menace, and it is the duty of society to protect these people against crooks and criminals rather than condemning the victims. The common laborer, the miner, the farmhand, each contributes his share of usefulness to society in full measure, "with the sweat of his brow" even though he may not be able to advance beyond the third or fourth grade in ordinary public school classes.

An argument is often advanced that many who are "dull" and "retarded" are not likely under present system of competition and efficiency to be able to support and maintain a family on a proper standard of living. Furthermore, so the argument goes, with the rapid advance of machinery and new inventions, the lot of the unskilled laborer is growing all the time harder and more difficult.

This argument does not carry much weight. Rather than make man fit the environment it is more logical to simplify the environment in such a manner that many may be able to cope with it. At present, we find that there are about 10% of the community who are unable to catch up with an already too-complicated environment. Allow the speed and complexity to go on for only a short period longer, and the environment may become so intricate that another 10% or 20% will

fall behind, and may have to be considered a social menace.

3. The standing of an individual on either side of the 70 I. Q. fence does not really signify fitness or abnormality. We actually meet people that score below 70 I. Q. who are normal in every respect. On the other hand, there is a recognized group of defectives, known as "defective delinquents" who are able to score a high I. Q. and yet are defective in a social sense. These are quite often intellectually alert and yet show deficiency in the appreciation of moral sense or senses.

These arguments cannot be altogether ignored.

German scholars do recognize that there exists a difference between the "dull normal" and the "pathological feeble-minded." At the Zurich Eugenic Conference, July 18-21, 1934, Professor Rüdin endeavored to outline the distinctions that exist between the psychopathic feeble-minded and normal stupidity.

In our present state of knowledge, the safe view to follow is to take in consideration both the educational and social capacities of an individual before casting a deciding vote as to the fitness of an individual. Each case must be studied separately.

[Epitomized from *Population, Race and Eugenics* (Morris Siegel, M. D.)].

PROGRESS IN THE CONTROL OF CANCER

The unknown horizons of cancer are being pushed back farther and farther through the closely related activities of clinical diagnosis and treatment, research and education. Each of these is making significant contributions to a wider understanding of the problems of malignancy. One of the most interesting aspects of the entire cancer problem is that practically every bit of additional scientific information about the disease adds to the hopefulness of its eventual control as a major cause of death.

Realization by the medical profession that the diagnosis and treatment of cancer is no longer a one man problem is offering much additional hope to the cancer patient. The value of organized tumor clinics in general hospitals—nearly three hundred of which are now functioning—is bringing a better appreciation of the complexities of this problem in modern medical practice. These clinics offer help to the family

physician who is often denied access to necessary diagnostic and therapeutic facilities; while to the cancer patient it gives the benefits of group consultation with those having the widest experience with malignant disease.

An additional advantage of the tumor clinic is its usefulness as a center for graduate study for all physicians within its sphere of influence. This is possible largely because of the increased number of cancer patients seen in comparison with the relatively small number of such patients seen in the average general hospital. The value of comparative methods of treatment can be established much sooner where large numbers of patients are seen. All in all, the tumor clinic offers the maximum of good service to the cancer patient and excellent opportunities for education of the physician.

In the field of research some of the most significant contributions to our knowledge about cancer are being made in the sciences of biology, chemistry, physics and genetics. The role of certain chemicals—now numbering approximately fifty with more being added at frequent intervals—in the etiology of cancer is now fully appreciated. The knowledge that cancer is primarily a biological problem concerned with the vital function of cell growth is stimulating research workers to focus attention on the cell to identify those forces responsible for malignant changes in the cell.

Cancer research today is concerned more and more with the chemical nature of cell activity and inquiry is being actively pushed in the field of biochemical investigations. Wide researches are under way to find those chemicals with the most potent influence on normal and abnormal cell activity.

The physicist is extending knowledge of irradiation therapy, with the result that increasing use is being made of this therapeutic agent in the treatment of malignancy both for curative and palliative purposes.

Studies in genetics have been confined largely to work with laboratory animals. The further this work progresses the more evident it becomes that vastly improved records of human cancer are essential if we are to know more accurately the influence of heredity on cancer development in the human race. Because the great majority of marriages bring about a dilution of the probability of transmitting cancer to offspring

through susceptible parents most geneticists are unwilling to go beyond recognition of the possible transmission of susceptibility to cancer in succeeding generations. Even though cancer may be proved to be conditioned by heredity, the rapidly expanding appreciation of the value of early diagnosis and prompt treatment will continue to offer much hope to the cancer patient and will more than offset such handicaps as heredity may impose.

The greatest advance in cancer education of the public has been the organization of the Women's Field Army of the American Society for the Control of Cancer. This organization now extends to forty-six states. Its objectives are to bring to the general public the known and accepted facts about cancer and methods for its control. The presentation of these facts by the medical profession to hundreds of audiences has caused thousands of persons for the first time to seek examinations to determine their freedom from this disease. It has caused countless others to replace their unreasoning fear of the disease with an intelligent caution.

The value of this educational program cannot be fully measured, but the medical profession is in a position to know better than any one else the results of this program as their patients come in increasing numbers for attention to their questions about this disease. Success of this educational work rests in large measure on full cooperation by the medical profession. As the objectives of periodic examination and recognition of the early signs of cancer become better understood a fuller cooperation by the physician will be expected.

The outlook for controlling the increased number of deaths from cancer in this state is becoming brighter. That fortunate time will be hastened in proportion to the cooperation that is developed between the patient and his physician. Education will reduce the waiting period by the patient in seeking professional advice and service. The physician will make his contribution by not delaying in diagnosis and treatment once the condition is brought to his attention.

MINNESOTA DEAN HAS HIS FEET ON THE GROUND

All of our universities have not, thank heaven, gone completely Bolshevik. From the pen of Guy S. Ford, Ph. D., Dean of the University of

Minnesota Graduate School, in his "The Price of Professional Liberty" are found these sane and saving pronouncements:

"The medical profession is the most powerful and coherent of any of the professional groups. With its definite professional preparation and objectives, the considerable background of general education that is now prescribed and the code that it professes, it comes nearer meeting the technical definition of a profession than any other major profession. In the medical profession the thoughtful citizen recognizes a group than can and does bring science into the service of the noble art of healing and alleviation. The gratitude of the patient and of the family and friends that stand helpless but hopeful in the presence of the physician surrounds the profession with an aura that colors no other profession so constantly and so subtly.

"All these professional and personal factors make a picture that explains why the medical profession is in the perilous position of having greater liberties and privileges than any other similar group. It is truly a perilous position because there is peril in great privilege and great responsibility. Most important for medicine are the changes in social attitudes. The old unrestrained individualism is gone."

PUBLIC HEALTH BILLS BEFORE THE ILLINOIS LEGISLATURE

H. B. 224 appropriates \$1,000,000 for the construction of a State tuberculosis sanatorium of 2500 beds to be operated by the State Department of Public Welfare, site to be selected by a special commission appointed by Governor.

H. B. 188 and S. B. 51 broaden the services provided for in the County Tuberculosis Sanatorium Act.

H. B. 320 validates elections for excess tax levies under County Tuberculosis Sanatorium Act.

H. B. 391 requires physicians and others attending professionally pregnant women to take or cause to be taken specimens of blood for laboratory tests for syphilis.

H. B. 176 repeals the hygienic marriage law requiring prenuptial test for syphilis and gonorrhea.

H. B. 324 appropriates \$25,400 to the State Department of Public Health for the establishment of a cancer diagnostic service.

H. B. 324 creates in the State Department of Public Health a Chief of Division of Cancer Control as a State Officer and sets up an Advisory Board to the Division of Cancer Control.

S. B. 109 provides that restaurants must obtain licenses at \$10 annually from State Department of Public Health which would have power to set up sanitary standards. Boarding houses excepted.

H. B. 230 requires the medical examination at 90-day intervals of food handlers—administration in State Department of Health.

H. B. 138 requires restaurants, drug stores and other places where food is served to public to maintain adequate and convenient toilet facilities.

H. B. 334 requires telephones in public booths to be equipped with sanitary facilities to prevent spreading of communicable diseases.

H. B. 319 directs State Department of Public Health to establish, extend and improve services for locating and giving medical care to crippled children to cooperate with Federal government in that work. Appropriates \$50,000.

H. B. 408. Emergency appropriation of \$75,000 to State Department of Public Health for purchase of pneumonia serum.

THE 1938 LOW MORTALITY RATE

The statistical Bulletin of the Metropolitan Life Insurance Company publishes some interesting and illuminating figures on the mortality rate for the year 1938. For instance:

"The death rate for the full year 1938 is now available and it can be announced that the improvement over the previous low mortality rate (as reported for 1937) was 6.8 per cent. Nineteen thirty-eight closed with the almost unbelievably low mortality rate of 7.7 per 1,000 for this large group of wage-earners and their dependents. Ten years ago their mortality rate was 9.2 per 1,000, so that, within a decade, there has been a reduction of substantially one-sixth.

LIVES SAVED AS THE RESULT OF REDUCED MORTALITY

"The crude death rate for 1938 (ages 1 and over) was 40 per cent lower than that for 1911, the first year of the Company's series of mortality records. If in the year just past the death rates of 1911 had prevailed, there would have

been 240,632 deaths among the Industrial policyholders,* ages 1 and over, instead of the 130,074 which actually occurred. This means a saving of about 110,500 lives due to the improvement in mortality. The accumulated saving of lives for the 27 years since 1911 amounts to approximately 1,383,500. During these same years there has been, of course, a marked improvement in mortality among the general population also, though not as great a change as that among the Industrial policyholders. The Company's Welfare services to its policyholders have, undoubtedly, been responsible in part for the superior showing of this group of insured persons as compared with the general population.

THE INCREASE IN LONGEVITY

Another numerical measure of the mortality of a group is the expectation of life. In 1911-1912 the expectation of life of the Industrial policyholders was 46.63 years, or 6.41 years less than that of the general population. In 1936 (the latest date for which comparable data for the general population are available) the expectation of life for the Industrial policyholders was 60.31 years, or only a half year less than that of the general population. As a matter of fact, the approach is even closer when comparison is made with the urban population of the United States.

Provisional figures for 1938 show that the length of life of the Industrial policyholders increased again last year, the figure being 61.86 years, the all-time maximum. This is a gain of 1.15 years in a single year, since 1937, expressing in another way the extraordinary decrease in mortality in 1938. Since 1911-1912, when our series of studies was initiated, the total gain has been 15.23 years. It would appear entirely possible that the expectation of life among Metropolitan Industrial policyholders is now essentially the same as that for the general population.

MORTALITY BY AGE

One of the most gratifying features of the mortality record of the Industrial policyholders for 1938 is that the death rate declined at every age range of life. The table shown below exhibits an interesting comparison of the reductions that have taken place since 1911, the earliest year for which the Metropolitan has records of its Industrial Department death rates by individual age periods. The improvement has been great-

*Weekly premium-paying policyholders.

est at the early ages, but it has been significant at every range of life, save in extreme old age, where the number of policyholders is relatively small. Even among these aged persons, however, the drop was by no means negligible, as it amounted to 9.4 per cent.

At ages 1 to 4 the death rate in 1938 was less than one-fifth of that registered in 1911. The declines in later childhood, adolescence, and adult life, up to 35 years, show reductions ranging from two thirds to nearly three fourths; and from 35 to 45 years, a drop of nearly three fifths. The long term decrease in mortality during the most important working ages of life is particularly noteworthy; for the reduction in the death rate at these ages has important economic and social consequences, foremost among which is the fact that, more and more, breadwinners are surviving through the age ranges of life where their children still require their support. Reduced mortality and sickness has enhanced the potential productivity of the United States and Canada by conserving earning power.

NEW "BEST RECORDS" IN 1938

The unprecedentedly low death rate of 1938 for all causes combined arises, necessarily, from other "Best Records," namely, those for individual causes of death. Nine diseases—scarlet fever, diphtheria, influenza, pneumonia, tuberculosis, diarrheal conditions, appendicitis, chronic nephritis, and puerperal causes—registered new low death rates among Metropolitan Industrial policyholders in the year just closed, and a rate identical with the previous low was reported for typhoid fever. The year was also marked by new minimal mortalities for several types of death by violence, namely, homicides, accidents (all forms combined), accidental burns, and railroad accidents.

The year's record, month by month, shows that in 10 of the 12 months (October and December being the exceptions) a lower death rate was registered than had ever before been in evidence for each particular month. In most instances the improvement, as compared with the previous lows, was very marked.

TUBERCULOSIS

Tuberculosis, all forms, registered a remarkable decline in mortality during the past year. For the first time in the experience of both the

general population of the United States and of the Industrial policyholders of this Company the tuberculosis death rate fell below 50 per 100,000.

Death Rates per 100,000 for All Causes of Death Total Persons, by Age Periods Metropolitan Life Insurance Company, Industrial Department, Weekly Premium-Paying Business, 1911 and 1938*			
Ages	1938*	1911	Percent Decline 1938 Since 1911
1 and Over.....	752.4	1,253.0	40.0
1- 4	272.8	1,479.1	81.6
5- 9	116.3	416.2	72.1
10-14	100.4	268.0	62.5
15-19	161.6	467.8	65.5
20-24	242.8	732.5	66.9
25-34	333.6	947.7	64.8
35-44	575.8	1,367.8	57.9
45-54	1,166.8	1,978.3	41.0
55-64	2,467.6	3,596.0	31.4
65-74	5,559.2	7,455.0	25.4
75 and Over..	12,622.0	13,926.9	9.4

*All 1938 death rates are subject to slight correction, since they are based on provisional estimates of lives exposed to risk.

The rate of 46.9 for these policyholders marked a decrease of 10 per cent from that recorded in 1937, the largest decline that has been reported in any single year for more than a decade.

When large reductions (7 to 9 per cent) were being registered during the worst years of the economic depression, it was generally assumed that these declines were only temporary and that a resurgence of the disease might be expected. It was believed that the widespread privation and suffering caused by the depression, particularly among industrial workers, was bound to be reflected in a rise in the incidence and death rate of tuberculosis. So far there are no indications that these dire predictions had any basis in fact. On the contrary it now seems certain that within a very few years the prevalence of tuberculosis will have been so reduced that the number of open cases will no longer be sufficient to maintain the disease among the important causes of death in this country. As a matter of fact, this situation has already come to pass in various sections of the country where tuberculosis mortality rates of close to 20 per 100,000 are constantly being reported.

However, this favorable outlook is no excuse for relaxing in any degree our efforts to wipe out this old-age scourge of mankind. Rather, as victory looms ahead, we must seize the opportunity and make use of every resource to complete the rout. Despite recent improvement, tuberculosis is still the leading cause of death in

the age group 20 to 44. It still is a serious menace to our colored population, in particular, and to the underprivileged inhabitants in the slum sections of our large cities. Fortunately, health authorities, both Federal and State, are now alive to the situation and already are preparing to undertake the final mopping-up drive against the disease.

CANCER

The mortality from cancer, which had been fairly static during the previous three years, resumed its upward swing in 1938. The rate of 97.8 per 100,000 was the highest ever reported among the Industrial policyholders of this Company. Since 1911 the crude death rate from cancer has increased nearly 44 per cent. However, as we have pointed out in previous issues of the *STATISTICAL BULLETIN*, the crude death rate from this disease is an inaccurate measure of the actual rise in the mortality from cancer. The increase in the proportion of elderly persons in our population, the improvement in diagnostic facilities, and the greater accuracy in reporting causes of death have all played an important part in this apparent increase of deaths from cancer. When due allowance is made for these and other factors it is doubtful whether any real increase has occurred.

DISEASES OF THE HEART

For the second year in succession, deaths from heart disease have shown a decline among these policyholders. The drop of 4.1 per cent in 1938 was the largest recorded in any single year since 1919, when a remarkable reduction in deaths from heart disease followed the influenza epidemic of the previous fall.

The present decline is partly due to the progress that is being made today against that form of heart disease which affects younger persons in particular, namely, chronic endocarditis. Recent successes against the infectious diseases, including acute rheumatism and streptococcic infections, have automatically helped to decrease the mortality from valvular lesions of the heart. Much of the decline in 1938 may be attributed to the unusually favorable weather conditions of the year, combined with a marked absence of influenza and other respiratory diseases so fatal to sufferers from heart affections.

CHRONIC NEPHRITIS

There was no interruption in 1938 of the

steady decline in the mortality rate from chronic nephritis which has been observed over a long period of years. The 1938 death rate of 53.2 per 100,000 Industrial policyholders represented a 4½ per cent drop from the figure recorded for the previous year and a new all-time low. Since 1911 the mortality from chronic nephritis has declined exactly 44 per cent among these insured wage-earners.

DISEASES OF THE PUERPERAL STATE

Following the course observed during the last 20 years, deaths of mothers from puerperal causes showed a further decline of 10 per cent during 1938. The death rate from these causes dropped to 6.2 per 100,000 policyholders, the lowest ever recorded for this group. Nineteen thirty-eight was the 18th successive year, with a single exception, in which the puerperal death rate showed a decrease. The latest figure is 65 per cent lower than that recorded 15 years ago.

Of course, much of this decline must be credited to the falling birth rate, because as fewer women come to confinement, fewer are exposed to the risks of childbirth. Nevertheless, it is certain that the birth rate among these wage-earners has not declined anything like 65 per cent since 1923. In the general population of the United States the net drop in the birth rate from 1923 to 1937 was only 23 per cent, and there is no sound reason for believing that the experience of these policyholders in this respect has differed essentially from that of the country as a whole.

Properly considered, these rates should be computed on the basis of the number of live births, but this procedure is impossible for the reason that the total number of births within this group of wage-earners is not known. Regardless of this short-coming, it is perfectly clear that the puerperal mortality record of these wage-earners is remarkably good. In all likelihood it will stand comparison with that of any similar large group throughout the world.

SYPHILIS

In so far as the mortality experience of these Industrial policyholders is concerned, there is as yet no statistical evidence that the intensive crusade of the last few years to eliminate syphilis and its allied diseases has made substantial progress. The 1938 death rate of 11.2 per 100,000

is only slightly below that for 1937 and very close to the figure recorded among these industrial workers 27 years ago. Perhaps it is unreasonable to expect a large reduction in the death rate so soon, as most deaths directly attributable to syphilis do not occur until many years after the disease has been contracted. Furthermore, it is probable that the wholesale propaganda, which has been so effective in breaking down the prudish tabu against the public discussion of syphilis, has also helped to overcome the reluctance of physicians to certify death to this disease on death certificates. Consequently, it is likely that the increase in the proportion of syphilis deaths, correctly reported as such, has been sufficient to offset any reduction that may actually have been achieved as a result of the present campaign.

MORTALITY FROM DIABETES

The crude death rate from diabetes dropped last year for the first time since 1923. Last year's rate was 4.3 per cent lower than the preceding year and was about at the level prevailing between 1933 and 1936. Moreover, the situation is even more favorable than appears from the figures given, because the proportion of older policyholders has been rising, and if we allow for this change the mortality is the lowest since 1930.

The decided fall in the diabetes rate last year was due in large part to the decreased prevalence of respiratory diseases which ordinarily are responsible for a considerable proportion of the deaths occurring among diabetics and classified under diabetes. Another factor in the decline in the mortality from diabetes was, no doubt the increased and better use of insulin resulting from the widespread popularity of the new types of insulin, especially protamine zinc insulin. Large numbers of diabetics, who previously did not take insulin, are now doing so because protamine zinc insulin usually need be taken but once a day. A third factor, not easily measurable, is the general improvement that has taken place in the treatment of diabetes. In the past few years physicians in various parts of the country have organized to provide better treatment of the disease in their localities. By such means as post-graduate instruction and clinics on diabetes for doctors, they have brought the latest methods in the treatment of diabetes to their medical col-

leagues. This movement has spread slowly, but unquestionably it has had a cumulative effect which is already beginning to be felt.

DIARRHEAL DISEASES

The death rate for diarrheal complaints (7.3 per 100,000) is at a new low and marks a drop of two thirds within the current decade. Interest in the course of the mortality rate from diarrheal diseases attaches chiefly to the first and second years of life, for it is in infancy that the control of these conditions has always presented a major public health problem. Accordingly, the new minimal death rate of 1938, together with the general trend over a long period of years, is an exceedingly gratifying development which reflects constantly improving standards of infant feeding and community and home sanitation.

APPENDICITIS

The appendicitis death rate (10.4 per 100,000) dropped more than 7 per cent in a single year. There has been a decline of 26 per cent since the beginning of the current decade. The 1938 figure marks a new low among the Metropolitan Industrial policyholders, but like the death rate for this disease in the country at large, it is still very high as compared with the average throughout the civilized world. Only a single country, Canada, has a higher appendicitis death rate than the United States.

ALCOHOLISM DEATH RATE AT LOWEST POINT SINCE 1921

Only 263 deaths were charged to alcoholism in 1938, as compared with 333 in 1937 and 373 in 1936. There was, accordingly, a drop of 21 per cent in a single year and 29.5 per cent in two years in the actual number of deaths reported from this disease. The alcoholism death rate in 1938 was 1.5 per 100,000. This is the lowest mortality rate for this disease in 17 years.

SUICIDES, HOMICIDES, ACCIDENTS

Deaths from violent means are grouped under three main headings, namely, suicides, homicides, and accidents; and the first named was the only one of the three to register a higher death rate in 1938 than in 1937. The highest suicide rate of the current decade among these insured wage-earners was recorded in 1932, that is, at the very nadir of the depression. Then came four consecutive years in which suicides

declined, followed by slight rises in 1937 and 1938.

The homicide rate in 1938 (4.4 per 100,000) was the lowest ever registered among these insured wage-earners.

No figure ever previously recorded for fatal accidents, for the Industrial policyholders, has come anywhere near the low point in the death rate which was reached in 1938, namely, 48.3 per 100,000. The actual number of lives lost was 1,014 less than in 1937, when the next lowest rate, (53.9), was recorded, when the next mated that throughout the United States 11,000 fewer persons were killed in accidents in 1938 than in 1937. The accident death rate among the insured for the year just closed marks a drop of 23 per cent as compared with the figure registered 10 years previously.

AUTOMOBILE FATALITIES

The death rate among the insured from automobile accidents dropped 17 per cent—to 17.5 per 100,000, the lowest since 1926. For the United States as a whole it is estimated that there was a decrease of 8,000 deaths in all types of motor vehicle accidents in 1938 as compared with 1937. This decline is in gratifying contrast to the increase throughout the country of 1,554 deaths in 1937, which brought the total motor vehicle death toll for that year up to 39,643, the maximum of all time.

There is good ground for the hope that the country is at last on the road to lasting improvement with respect to motor vehicle fatalities—especially as motor vehicle travel did not decline in 1938, and accordingly, the chances for fatal accidents were as numerous as in the preceding year. We must conclude that both drivers and pedestrians are becoming more safety-conscious, and that safety education is now making large strides toward safeguarding the lives of the people against this form of accidental death.

LONGEVITY

In the twelve states which comprised what is known as "Death Registration Area of the United States" (which now includes all states of the Union) the average expectation of life in 1901 was slightly more than 49 years. In 1936, when the registration area included all states, the average expectancy was nearly 61 years (60.8). In other words, the average duration of life in the United States was 11½ years longer in 1936 than it was in 1901. For whites, the rate of gain has been more rapid than for colored inhabitants.

The gain in life expectancy has been distinctly more rapid for white females than for white males. For the former, the average life span was 64.36 in 1936 against 51.03 in 1901, an increase of 13.28 years, while for white males it was 60.18 in 1936 against 48.23 in 1901, a gain of 11.95. Throughout this period women have had a longer life expectancy than males and the difference, now somewhat greater than four years, is growing gradually in favor of women. Since 1930 the average life expectancy for the entire population in the United States has tended upward at a much reduced rate, being 60.3 in 1931 and 60.8 in 1936.

There seems to be a double reason for the greater longevity of females—biologic and practical. The biologic factor is suggested by the fact that more male than female babies are born—ranging from 103 to 105 or so males per 100 females. The practical factor is suggested by the greater gains in longevity of females. Males suffer much higher mortality than females from accidents, homicide and suicide. The higher mortality in males from such causes are by no means offset by female deaths from complications of childbirth. Women are more closely associated with the health protective practices involving children. Influenced thereby, they probably profit more than men by the newer knowledge of health conservation and thus gain more in longevity.—Department of Public Health of Illinois.

COMBATting SELF-MEDICATION

Doctor:

Do you realize that more than 20 per cent of the public practice self-medication?

Do you realize that this is largely due to your indifference or oversight?

Do you realize that when you tell a patient to go to the drug store and get a remedy that the next time he thinks he has a similar trouble he will not consult you, but go direct to the drug store?

Do you realize that he will tell his friends and they do likewise?

Do you realize that trade names are usually chosen for the purpose of easy money?

Do you realize that when you write a Rx for such a name or dispense it with the original name on the container you are making a self-medicator of the patient?

Do you realize that the medical profession is now accepting the literature of the manufacturers of proprietary preparations and the statements of their representatives as the chief source of therapeutic information?

Do you realize that the New U. S. P. & N. F. became official June 1, 1936—N. A. R. D. Journal.

Two physicians accompanied Columbus in his first voyage, both unhesitatingly abandoning country, family, and ease to take part in the expedition organized by the great navigator. One of these physicians was Don Alonzo on board the *Santa Maria* and the other Don Juan on board the *Pinta*. Don Juan finished his days in a tragic manner, being horribly massacred by the Indians, the first martyr of our profession in the New World.—*Caprio*.

SUGGESTIONS ON PREPARING COPY

WRITING A CRAFT AND AN ART

"It is a craft when practiced for the uses of daily life by persons of ordinary endowments; it is transformed into an art when to excellence of craftsmanship is added the formative principle that differentiates an art from a craft.

"It might be supposed that anyone who wished to write would know what he wished to write about. But many merely wish to write. To recommend that such a person choose a subject which he knows well is not so superfluous as it seems."

A Manual for Writers: Manley and Powers

"Accurate use of a large vocabulary of words clear and sharp in their meaning marks the scholarly writer."

The Writing of Medical Papers: Mellish

A medical editor welcomes copy on new discoveries or novel applications of old principles when presented in attractive form. It therefore behooves the writer to limit his subject closely, to take time to condense and polish the text, verify the statistics, illustrations and tabular matter and present his ideas in a form to appeal to the reader.

Medical literature is accumulating at such an enormous rate that it is comparable to the astronomer's theory of the "Expanding Universe." To add to the mass, unless the contribution is novel and well presented, is a liability rather than an asset.

Following the publication of "Observations on Copy" two years ago there was some improvement in the paper prepared for the annual meeting and the suggestions are revised and repeated at this time in the hope that they may again be useful in the preparation of papers.

Much time, labor and expense on the part of writers, editors, printers and others can be saved by compliance with these suggestions.

Titles of articles should be brief and explicit. Otherwise they cannot be readily located in the Index Medicus and the author loses the advantage of that excellent publicity.

Paper and Style: All copy should be submitted on standard size white paper, 8½x11 inches and double spaced throughout. Page to be blank 1½ inch top and left side; inch on bot-

tom and right side. *Copy to be original.* (Author keeps a carbon copy.)

Pages Numbered: All pages including tables, legends and bibliography, to be numbered consecutively. Also all illustrations to be numbered and marked "top" and have author's name on back.

Title, author: Title of paper, author's name and city address should appear in order stated at top of first page; author's street address at end of article.

The contents of paper should be in the best possible style and turned over to the official reporter with the distinct understanding that proof will be submitted to authors for the correction of *typographical errors only*. If changes from copy are desired they will be made at *author's expense*.

Spelling: Spelling as in Stedman's Medical Dictionary is considered standard. He does not recognize such barbarisms as oedema which he calls "variant," nor have we adopted the short form of though, thorough, etc., even if some lexicographers have.

Abbreviations not in dictionaries should not be used except in tables with explanatory footnotes.

Words Often Misspelled

abscess	inflamed
anemia	inflammation
anastomosis	inoculation
anesthesia	myxedema
benefited	per cent. (2 words with period)
bactericidal	preventive
calcareous	septicemia
carcinoma	smallpox
caseous	syphilis
desiccate	thorough
diphtheria	though
dyspnea	through
edema	tonsillitis
esophagus	tryparsanide
goiter	x-ray
hemorrhage	
Hippocratic	

Compound Words: Many medical terms formerly written separately or hyphenated are now run together as in German, which has a certain scientific advantage however cacophonous the sound. Recent editions of both Dorland and Stedman have pharyngomaxillary and sternocleidomastoid which were formerly hyphenated.

Stedman writes all gastro compounds without hyphens. Funk & Wagnall's Standard uses hyphens, indicating that medical practice follows the German style more closely.

Capitalization: No capitals unless proper

name or beginning a sentence: thus doctor, physician, dentist, pediatrician.

Names of diseases and medicines not capitalized unless named for a *person*.

X-ray not capitalized unless beginning a sentence.

Titles of articles when referred to *in the article* are not capitalized, or if capitalized should be in quotes.

Illustrations: All cuts required for illustration are furnished at *author's expense*. Clear photographs and wash drawings can be reproduced in halftone cuts; line drawings in zinc etchings. Minimum size halftones cost about \$3 each; minimum etchings about \$2. *Negatives* of radiograms, either glass or film, are not acceptable; *prints* should be submitted.

Bibliography: References to literature should appear in numerical order in the text and the bibliography should be collected at end of article with the same numbered references. It is rarely necessary to write names of medical journals in full. (J. A. M. A.)

Since 1927 the Index Medicus has maintained a uniform standard of references which answers every requirement of brevity, uniformity and accuracy that makes it the supreme arbiter in this field. This system was directed to our attention by Mr. Alfred L. Robert, medical librarian of Columbia University, and we have redacted copy recently submitted to the Journal in accordance with this plan. This was facilitated by the cooperation of the staff of the Crerar library.

If authors will follow this system from this date it will save extra work for all concerned.

The example quoted by Mr. Robert was taken from February (1934) ILLINOIS MEDICAL JOURNAL as follows:

"Ford, H. L., Deep neck infection—surgical approach, Illinois M. J. 65: 117-128, 1934."

It will be noted that this contains the author's name and initials, title of paper, name of journal abbreviated, volume number in *Arabic numerals*, pages, *first and last*, and year.

The data include everything necessary to locate the article in a library with nothing superfluous.

Similarly *quotations from books* should contain the author's name, title of book, place of publication, publisher's name, year and pages.

Arabic numerals are specified instead of Roman as they are more familiar and less liable to error in copying.

Phony Locutions: "He operated six cases; others were unoperated." It seems incredible that any physician or surgeon could be guilty of such a sentence, but unfortunately it is not so uncommon. Others "operate" patients. Why not operate "in" the case or "on" the patient.

The following quotation from Stedman's Medical Dictionary may clarify this usage:

"*Case* (kās) (L. casus, an occurrence). An instance of disease with its attending circumstances. The patient is not the case; the *patient* dies or recovers, the *case* terminates fatally or ends in recovery; the surgeon operates *in* a case, but operates *on* the patient."

Smith, Brown, etc. Why not Smith, Brown, et al.?

"Cases in whom" should be cases in which, but "patient in whom" is correct.

We quote below the excellent summary of language to avoid from the Journal of the Medical Association of Georgia:

REPREHENSIBLE MEDICAL ENGLISH

TWELVE VALUABLE POINTS IN THE LANGUAGE OF MEDICINE

1. "Case" must not be used for "patient," nor "cure" for "treatment."
2. "Tubercular" means "nodular"; "tuberculous" means "infected with the bacillus of tuberculosis."
3. "Cystoscope" is a noun and must not be used as any other part of speech.
4. It is possible to "operate a cotton-gin," but it is not possible to "operate a patient"—nor his appendix.
5. "Acute appendicitis" is common, but an appendix cannot be "acute."
6. "Acute abdomen" is beyond the pale.
7. "Pathology" means the "science of disease"; it is therefore absurd to speak of "pathology in the right lung."
8. "Positive serology" is the worst type of jargon: apparently "positive Wassermann reaction" is usually meant.
9. "Specific" and "luetetic" are convenient to obscure meaning from patients' relatives, but "syphilitic" is better in writing for the medical profession.
10. It is incorrect to say the patient had "no temperature." One may say that there was "no elevation of temperature," but it is shorter to say there was "no fever."
11. "Shot" is perhaps the most abused and overworked word in medical literature. Shot is of lead.
12. Bad spelling is unpardonable, so a good dictionary is indispensable.

MEDICAL ECONOMICS

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E. P. Coleman, M. D.
W. M. Hartman, M. D.
J. R. Neal, M. D.
I. H. Neece, M. D.

Edited by the Committee on Medical Economics
of the
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E. S. Hamilton, M. D., Chairman
Kankakee, Illinois

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In the excitement surrounding the future of PWA, AAA, as well as a few other alphabetical spending plans in Washington, the so-called Wagner Bill to increase the scope of the Government in supplying and controlling medical care, has received little publicity. However, this should not lull the medical profession into a feeling of security, for Senator Wagner is an adroit politician, who, as spokesman for the administration, has introduced and successfully manipulated some of the most debatable and revolutionary of the so-called new deal reform bills through Congress. We may safely assume that he is quietly lining up votes for his pet measure and is promising all that is necessary, including the swapping of votes on less radical measures, to have all the support possible when the bill is called for vote. Meanwhile the medical profession is allowed further opportunity to contact their representatives in Congress and explain to them the objections of the medical profession to the bill, always stressing the final results on the public which are a poorer type of service than that which they are now receiving from the physicians of this country *as individuals*. This can easily be proven by comparison with the results and statistics in foreign countries, where some system of socialized medicine has been in operation for many years.

No member of Congress should be uninformed of the facts on this bill or the stand of the medical profession if the medical profession as individuals as well as an organization will take a little time to acquaint themselves with the facts and then transmit them to the members of Congress.

For the first time in many years a strong attempt is being made to alter the laws in regard to licensing the healing profession in Illinois. From the reports from the Chairman of the Legislative Committee of the Illinois State Medical Society, Dr. John Neal, it must be evident

to a large majority of the members of the society that the osteopaths, chiropractors, and naturopaths are making a determined effort to have separate examining boards for their cults. This is basically different from the method now in force in Illinois, and on first thought would seem impossible of attainment. But, this year, these cults apparently have a strong lobby and are not short on financial backing. These two factors have always attained unexpected objectives in politics and if they are assisted by lethargy on the part of the medical profession, we might suddenly find that they have been successful, in spite of the apparent difficulty of their task. Under the guidance of Dr. Neal, their attempts should be defeated if we will only follow his advice and contact our representatives in both Houses at Springfield every time, we are so requested by Dr. Neal and a few other times when we can do so. Members of the Legislature are willing to talk on these matters and are particularly interested to know the stand of the physicians of their district. Among these, their family physician should and will have the most influence. So if you are the family physician of either a Senator or a Representative, get in touch with him at once, after reading up on the proposed bills and have definite reasons why the proposed changes are inimical to the health of the people of Illinois. This is a definite task for every member of the State Society.

At a recent medical meeting one of the outstanding Senators from a nearby state was quoted as saying that he was opposed to the so-called Wagner Bill because it would raise taxes and not because of any other reason. With all the other reasons that could be explained to the Senator, why this proposed bill is or would be bad for the health of the people of the United States it seemed that some physician well acquainted with the Senator had failed to take the necessary time to explain to him in detail why

he should be opposed to the bill for reasons other than the expense. After some conversation on the subject, the physician from that state, who made the above quoted statement said that he would see that the Senator was contacted by the proper man from his state and that he would have the entire matter explained to him. It is not enough to have the bill opposed; it must be opposed for a definite reason and that must be that it will be inimical to the public health in the future.

Nations Business for February, 1939, quotes the reply of Dr. Frederick L. Hoffman, LL.D., once Vice-President and statistician of the Prudential Insurance Company in answer to a request by the Medical Society of the state of New York to study the problem of Compulsory Health Insurance, as follows:

"It encourages public dependence, increases bureaucracy and the burden of taxation, hinders medical progress and brings the regimentation of the medical profession to virtually the standard of a labor union."

Assistant Attorney General Thurman Arnold presented a different point of view when he charged various medical men with forming a combination in restraint of trade.

The barrage of propaganda continues in the daily press as well as the other lay press. Occasionally there is an article which presents the view of the medical profession. Fortunately several of the metropolitan newspapers are opposing the propaganda in their editorials and while all editorials are not read by the average man, it is most heartening to find that the medical profession has its champions and defenders. We should read every article available, so that we can discuss intelligently the statements made in these articles when we are asked about them by lay people who have also read them and desire further information.

The Hall of Health promises to be better than last year and it is to be hoped that every medical man attending the convention in Rockford next month will visit it. Also that he will encourage attendance by the laity if they are able to get to Rockford. Remember the idea is in the experimental stage and its future depends on its success. Take time to see what is done there and if you have any suggestions or criticisms, feel free to make them to the proper of-

ficials. Also try to attend the meeting of the Secretaries' Conference to be held in the evening for the first time at the Hotel Faust on Tuesday at 6:00 P. M. in the Rainbow Room. This is a most important meeting to officers of the County Societies and is being held in the evening, so that all can attend without missing out on some other important meeting.

E. S. Hamilton,
Chairman of Committee on Medical Economics.

Correspondence

PROFESSION'S APATHY

Boston, Mass., March 15, 1939.

To the Editor: For some twenty-five years, you and other editors and officers of state medical organizations have commented upon the trend of certain health movements, lay and federal, and directed attention to the potential eventualities that might come to pass. Officers of these organizations with certain few fellow thinking members did not fail in their responsibilities to keep their membership advised as to that which was transpiring. With commendable persistency you have urged that all members join in establishing and observing plans for preparedness to resist and defeat efforts that were designed and intended to subsidize the practice of medicine and establish lay control of physicians under lay and governmental direction and control. The menace of bureaucratic control and domination of medical practice, the providing of medical care, and regimentation of individual practitioners has been pointed out persistently and consistently these many years. In spite of this service, warning, and even pleading some 85 per cent of the members complacently pursued their professional labors, imbued with their science and seemingly wholly unconcerned and self-sufficient.

The profession now finds itself in the midst of the conditions that were predicted. The past three or four years have witnessed a somewhat stampeded action on the part of delegate representatives in our state and national organizational, executive and legislative bodies. Policies have been declared. Positions have been defined and stated. Numerous and varied plans have been devised and inaugurated, or are in the process of being devised, for providing medical care

for certain groups, classes, communities, or states. Here again, officers and delegated representatives have lived up to their responsibilities.

It is astounding, however, to witness still the lack of unity on the part of the individual physicians and their failure to evidence support of these policies, positions and plans that are now before them, in order that the quests of those who are outside of the profession, yet who seek to control and direct it, may be circumvented. Officers, executives, editors, delegates and committees are alert to their responsibilities and are laboring mightily through long days and weeks to comply with the mandate given them. Without wholehearted, 100 per cent support their efforts are quite possibly doomed to end in failure and defeat. They are opposed by a powerful, designing group that is vocative and knows the value of propaganda, which they employ unceasingly.

That is the situation, it seems to me, that exists today. The time for resolutions and declarations and pronouncements is passed. The representations that are being made so ably by officers and committees must, of course, be continued. This *alone* will not, however, suffice. A new force must be enlisted and called into immediate action.

This new force is every *individual* member of our county and state medical organizations—112,000 strong. Defeat of undesirable legislation before legislatures, local governments and before the electorate in the form of initiatives has been accomplished by our legislative committees on many occasions all over the country. The power, the force that made it possible to defeat these measures was the representation, influence and activity of the united efforts of individual members who contacted legislators or voters and voiced their individual and collective desires and opinions. They were listened to. That power, force and influence still remains to be called into action. *The call should be issued.*

Once it was said: "Give me the medical profession and let me organize it politically and I will rule the nation." Again, a certain Governor said: "Go home. Doctors, organize and then come back and tell us what you want and we will give it to you." We should not forget or fail to employ the power we hold.

It would seem, therefore, as the present crisis grows more acute, that this action is indicated:

1. To continue with avidity the activity and representations that are now being made by the organizations' representatives in federal and state branches of government. This is a colossal task demanding concentration and untold time.

2. To create a national board of seven or nine members with one or more full-time executive officers. This national board in turn is to appoint a similar board in every state. State boards are to appoint county, district and metropolitan boards.

3. These boards under the national board are to concern themselves *solely* with:

(a) Drafting individual members into action to file their protests and the protests of their patients and friends with legislators, senators and congressmen. Governmental officers and legislators *will* listen and pause when they receive three to four million protests in opposition to present proposals. They know that it would be political suicide and loss of office if they did not heed the wish of their constituency.

(b) Composing and distributing literature for public information upon medical care to build and record sound public opinion and so nullify the propaganda that is being put out by designing proponents.

It can be done. The plan is old, but rightly employed and directed, it has never failed to succeed. The chief factor and question that is most pressing is: Who will initiate the organization of this power and force? The A. M. A. trustees have the power. The Councils of state societies have the power. The Houses of Delegates have the power. *Will this power be used*, without undue or further delay, to put into the field and into action *the only power that can preserve* the independence and integrity of the practitioners of medicine. Procrastinating hesitation hastens the hour when "it will be too late." Prompt action is the answer. I repeat. *"It can be done."*

FRED C. WARNSHUIS, M. D.

VETERANS' SERVICE COMMITTEE DINNER

The annual dinner of the Veterans' Service Committee will be held in the Hotel Faust, Rainbow Room, main floor, Tuesday evening, May 2, 1939, at 6:15 p. m. Dr. F. O. Fredrickson, Chairman of the Committee will officiate as presiding officer.

PROGRAM

Call to Order.

1. Presentation of Colors—Commander Walter Craig, Post No. 60.

2. Bugle: To the Colors—Carl Steinhoff, M. D.

3. "Expansion of the Medical Idea in Veteran Organizations"—Overton Brooks, M. D., Commander Medical Post, American Legion; Lt. Commander Medical Corp Naval Reserve.

4. "Are Regulations for Admission to Veterans' Hospitals and Facilities Adhered To?"—Col. Robert C. Bourland.

5. "Procedure for Admission to Veteran Facilities"—Edward Clamage, Commander, Department of Illinois American Legion.

Moment of Silence.

Retirement of Colors.

ACTIVITIES OF WOMAN'S AUXILIARY

The Convention of the Illinois State Medical Auxiliary is to be held May first to third inclusive at Rockford. All Doctors' wives as well as Auxiliary members are invited to attend and enjoy several planned functions.

All ladies are invited to attend the luncheon on Tuesday, May 2nd, at the Forest Hills Country Club; tea at Rockford College and dinner at the Rockford Woman's Club with a program and style show. Wednesday, May third, luncheon tea, President's dinner and dance.

Send reservations early.

Cook County members and prospective members enjoyed a bridge tea early in March.

Bureau County members are to be congratulated upon the number of Health Talks, Films, and Programs. They have had several each month for Lay Groups. Mrs. M. A. Nix is President and Mrs. B. A. Troupa, Program Chairman.

Vermilion County Auxiliary held their Annual Meeting, March 7th. Mrs. E. F. Dietrich, presided. Newly elected officers were announced as follows:

President, Mrs. J. H. Williamson.

First Vice President, Mrs. T. E. Walton.

Second Vice President, Mrs. A. O. Sistler.

Third Vice President, Mrs. O. W. Michael.

Secretary, Mrs. Bert Moore.

Treasurer, Mrs. H. F. Hooker.

Mrs. I. J. Scott presented Mrs. Dietrich with the Past President's pin. The program for April will be "Cancer" in keeping with Cancer Week.

The State Board met March 25th in Chicago at the Palmer House. Mrs. Wm. Raim presided.

Please send all material for the year book to

the Press Chairman at once, so that your County activities will not be omitted from the book.

Mrs. C. Otis Smith,
Chairman, Press and Publicity.

UNIVERSITY OF ILLINOIS ALUMNI MEETING

The alumni of the University of Illinois College of Medicine will hold a luncheon at the Faust Hotel, Rockford, Ill., on May 3, 1939, at noon. A very interesting program is contemplated. Dr. Wm. Plice, '02, will preside. Please make effort to attend.

M. H. Streicher, '24.

Secretary, Medical Alumni Association.

MEETING OF AMERICAN HEART ASSOCIATION

The Fourteenth Scientific Sessions of our Association will be held at the Hotel Jefferson, St. Louis, Missouri. The general cardiac program will be given on Friday, May 12, and the program of the Section for the Study of the Peripheral Circulation on Saturday, May 13.

ANNUAL LUNCHEON OF STATE MATERNAL WELFARE COMMITTEE

The State Maternal Welfare Committee will hold its annual luncheon in the main dining room of the Faust Hotel, Wednesday, May 3rd, at high noon. Following the luncheon there will be a program of much importance.

The officers of the State Society and all members of the State Maternal Welfare Organization are cordially invited to attend.

T. B. Williamson, M. D.,
Chairman.

John F. Carey, M. D.,
Secretary.

THE CAUSE OF THE PRESENT SAD LOT OF THE FRENCH DOCTOR IS THE SOCIAL INSURANCE ORGANIZATION

The Paris letter of the A. M. A. regular correspondence under date of December 31, 1938, in speaking of the protest against inroads of social insurance and competition of public hospitals says:

Attention was called in a letter in THE JOURNAL Dec. 10, 1938, to a protest meeting in Paris

November 4 under the auspices of the medical syndicate or organization which has charge of public relations of the physicians practicing in Paris and its suburbs. More than 1,500 practitioners attended the meeting. The president, Dr. Boelle, said that practitioners with few exceptions are at present unable to earn a living. This affects recently licensed as well as older men, as shown by the number of appeals for aid from members of the syndicate. This state of affairs is a danger, because it is liable to tempt physicians to abandon the ethical methods so long upheld by the profession. Not only has the average practitioner's income been reduced but his expenses have been increased by excessive taxation and the rise in the cost of living. The department of the Seine, in which Paris is located, contains one-eighth of the entire population of France and one-fourth of all French practitioners. Many foreign physicians have come to France since the World War, thus adding to the competition. Another cause of the sad plight of the practitioner is the free rein given to quackery of all types. In few other countries does the press allow as much space to be occupied by advertisements of all sorts of cures. So far the medical profession has not been successful in its efforts to suppress such practices, but some hope will be held out if proposed laws are passed.

These two causes of the present depression are of minor importance compared with the major one of collective medicine as it is being practiced all over France, but not so seriously affecting the country practitioners as it does their city colleagues. A large percentage of patients, instead of consulting a physician at his office or calling him to attend them at their homes, apply for medical aid to the hospitals of the city of Paris, dispensaries of all kinds, social insurance bureaus and the organizations established by various industrial concerns. The city hospitals make no discrimination in their admission of patients. Many patients from country districts, by giving false addresses, are admitted although well able to pay for care in private institutions. It is estimated that 22 per cent of the patients in public hospitals would be refused admission if inquiries were made as to their financial status. Many patients prefer to go to a city hospital be-

cause the staffs are composed of some of the most eminent members of the profession, who are appointed after a severe competitive examination. A bill is now before the parliament which will enable a stricter control to be maintained against admission of those who are able to pay for medical aid.

A final cause of the present sad lot of the practitioner is the social insurance organization. The indemnities allowed for sickness and maternity claims have been so insignificant that it has resulted in the insured's being forced to apply to dispensaries and city hospitals instead of consulting practitioners and going to private hospitals. The insured receives only 15 francs (35 cents) from the *caisse*, or social insurance office, but is obliged to pay twice as much for consulting a physician. Even if the patients go to a physician's office or call him to their homes, the *caisses* compel a great many formalities to be fulfilled and pay only after much argument.

TEN CARDINAL PRINCIPLES FOR ETHICAL MEDICAL PHYSICIANS

At the meeting of the American Medical Association at Cleveland, June, 1934, the House of Delegates went on record in favor of the following set of principles to guide the medical profession in its efforts to meet the problems in medical service under present menacing conditions. The principles enumerated are still the law of ethical medicine, we quote:

First: All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

Second: No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

Third: Patients must have absolute freedom to choose a legally qualified Doctor of Medicine who will serve them from among all those qualified to practice and who are willing to give service.

Fourth: The method of giving the service must retain a permanent, confidential relation between

the patient and a "family physician." This relation must be the fundamental and dominating feature of any system.

Fifth: All medical phases of all institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

Sixth: However the cost of medical service may be distributed, the immediate cost should be borne by the patient, if able to pay, at the time the service is rendered.

Seventh: Medical service must have no connection with any cash benefits.

Eighth: Any form of medical service should include within its scope all qualified physicians of the locality covered by its operation who wish to give service under the conditions established.

Ninth: Systems for the relief of low income classes should be limited strictly to those below the "comfort level" standard of incomes.

Tenth: There should be no restrictions by non-medical groups on treatment or prescribing unless formulated and enforced by the organized medical profession.

HALL OF HEALTH

A HALL OF HEALTH will again be sponsored by the Illinois State Medical Society in connection with its Annual Meeting in Rockford. It will be housed in the Armory and will consist of about fifty exhibits covering all phases of health and health activities.

A number of Rockford groups are exhibiting and will plan to have demonstrations for the public in the way of first aid, resuscitation, handcraft for the handicapped, broom-making by the blind, etc.

The Hall of Health will officially open at noon on Monday, May 1, and will close on Thursday evening at 9:00 o'clock. Doctors attending the Scientific Meetings will not want to miss these outstanding and unusual exhibits, some of which were on display at the Century of Progress.

PROGRAM ANNUAL MEETING ILLINOIS TUBERCULOSIS ASSOCIATION *April 24 and 25*

Pere Marquette Hotel, Peoria

Monday, April 24

11:00 A. M.—Annual Business Meeting.

12:15 P. M.—Meeting of Board of Directors.

Monday Afternoon, April 24

Education and Nursing

Presiding—Miss Zoa Velde, Executive Secretary, Peoria County Tuberculosis Association, Peoria.

2:15 P. M.—"The Early Diagnosis Campaign—A Major Activity"—Mrs. William R. Fringer, Executive Secretary, Winnebago County Tuberculosis Association, Rockford.

Discussion—Miss Gertrude Berls, Executive Secretary, DuPage County Tuberculosis Association, Glen Ellyn.

2:45 P. M.—"What is a Well-rounded Educational Campaign?"—Mr. Donald E. Pratt, Executive Secretary, Kane County Tuberculosis Association, Aurora.

Discussion—Mr. Ben D. Kinningham, Jr., Field Secretary, Illinois Tuberculosis Association.

3:15 P. M.—"Problems of the Tuberculosis Nurse in a County Without a Sanatorium"—Miss Nelda Noltling, R. N., Tuberculosis Nurse, Freeport.

Discussion—Miss Ruth Kirk, R. N., Whiteside County Nurse, Sterling.

3:45 P. M.—"The Sanatorium Field Worker"—Mrs. Helen Kalapis, Field Supervisor, Macon County Tuberculosis Sanatorium.

Discussion—Miss Mary Southwick, R. N., Executive Secretary, McLean County Tuberculosis Association, Bloomington. Miss Helen A. Heighway, R. N., Supervising Field Nurse, Madison County Tuberculosis Sanatorium, Edwardsville.

4:15 P. M.—"The Association and the Sanatorium Work Together"—Mrs. Emily H. Cole, Executive Secretary, Madison County Tuberculosis Association, Edwardsville.

Discussion—Miss Rubye J. Mochel, Executive Secretary, Macon County Tuberculosis & Visiting Nurse Association, Decatur. Mrs. Lola Mahoney, R. N., LaSalle County Tuberculosis Nurse, Ottawa.

4:45 P. M.—"The Family Physician and the Tuberculosis Problem in Southern Illinois"—Dr. Kent Ellis, Murphysboro.

Discussion—Dr. John R. DeVelling, Rosiclare; Dr. H. A. Elkins, Mt. Carmel; Dr. C. E. Morgan, Mattoon.

7:45 P. M.—X-Ray Conference. Chairman—Dr. D. O. N. Lindberg, Medical Director and Superintendent, Macon County Tuberculosis Sanatorium, Decatur.

A study of X-ray interpretation. Physicians bringing puzzling or interesting films should advise in advance. Send case reports if possible.

Tuesday Morning, April 25

The Family Physician and the Sanatorium

Presiding—Dr. A. L. Nickerson, President, Kankakee County Tuberculosis Association.

9:30 A. M.—“The Social Worker in Tuberculosis”—Mrs. G. L. Lindsley, Social Worker, Rockford Municipal Tuberculosis Sanatorium, Rockford.

Discussion—Miss Helen V. Elliott, R. N., Peoria County Nurse, Peoria. Dr. Robinson Bosworth, President, Illinois Tuberculosis Association.

10:00 A. M.—“The Family Physician Views the Tuberculosis Problem”—Dr. W. T. Holladay, Amboy.

Discussion—Dr. W. A. Potter, Sandwich; Dr. R. M. Montfort, Danville.

10:30 A. M.—“The Sanatorium Aids the Family Physician”—Dr. L. L. Collins, Medical Director, LaSalle County Sanatorium.

Discussion—Dr. A. T. Cole, Medical Director, Outlook Sanatorium, Urbana.

11:00 A. M.—“The Peoria Sanatorium District”—Dr. F. M. Meixner, President, Peoria County Tuberculosis Association, Peoria.

Discussion—Dr. David Loewen, Peoria.

Annual Luncheon

12:30 P. M.

Presiding—Dr. F. M. Meixner, Peoria.

Invocation—Right Rev. William L. Essex.

Address of Welcome—Dr. Sumner Miller.

President's Address—Dr. Robinson Bosworth.

Presentation of Seal Sale Awards—W. P. Shahan.

Address—Speaker to be announced.

Tuesday Afternoon, April 25

Discussion Forum

Indications and Results of Certain Types of Thoracic Surgery

Presiding—Dr. Arthur S. Webb, Wheaton.

Leaders—Dr. D. O. N. Lindberg, Decatur; Dr. Richard Davison, Chicago; Dr. W. J. Bryan, Rockford; Dr. Robinson Bosworth, East St. Louis.

\$10,000 A YEAR MAN CRITICIZES DOCTOR'S BILL

California & Western Medicine contains an article by Westbrook Pegler in *Sacramento Union*, August 25, as follows:

It is coming on toward the deadline, so there is not enough time today to settle here, for good and all, the issue of socialized medicine. However, there are some letters at hand which will do for fuel for argument, one contending that a doctor is overpaid at \$200 for doing an appendectomy and saving a solvent patient's life.

“We could not do without water for a month,” says this one, and adds that we would starve for lack of food, proceeding then to challenge, “is a month's supply of water necessarily worth \$200? And one who charged a starving man \$200 for a single meal—wouldn't he be regarded as devoid of humanity?”

Well, a drink of water has been known to sell high in certain frontier places where water was packed in casks on burros, and in such cases if a man lacked a dollar or whatever the price to pay for a drink the price might as well have been \$200 as far as he was concerned.

The same argument goes for the single meal to save a life. Many a man with a thin dime in his pocket has

been turned back into the snow because the price of a flop in some fleabag on South Clark or West Madison Street, Chicago, or on the Bowery, New York, was 15 cents.

What's the Difference?

And there is just no reckoning the number of hungry men who have gazed in at the windows of restaurants, even the dirty spoon joints, too weak and famished to drool, and continued to starve because they couldn't buy a cup of coffee and a roll, much less a meal. In such cases what difference does it make whether the price of a flop or a meal is 15 cents or \$200?

Just after prohibition began the Salvation Army placed in charge of one of its down-and-out clubs, one of those great big, clear-eyed, right-thinking, clean-living, muscular Christians of the Y. M. C. A. type, who hated anyone who took a drink and would strut his muscularity and his particular interpretation of Christianity by heaving out all the sick and snaggle-toothed and busted bums who made the mistake of looking for Christian kindness there. He wanted only God-fearing respectables, and he used to boast of the number of his permanent lodgers who had steady jobs, forgetting that his place was nominally a charitable institution and that these deadbeats were able to pay reasonable rates for private quarters, as independent men should be compelled to.

The same deadbeat temperament takes advantage of free or nominal fee medical or surgical service intended for the truly poor, and this abuse has become so raw that in Washington all members of both houses of congress and all members of the cabinet, by a cheap and greedy distortion of an act of congress, are now entitled to such service in the naval hospital practically free.

Couldn't Pay Doctor's Fee

I doubt that even in frontier desert places any man ever perished for lack of the price of a glass of water, but there are thousands of doctors who give away free the same service that would be unavailable to desperately sick people if they insisted on their full fees. But a little lower specimen of insect life than the doctors who won't treat the sick poor free is that type of man or woman who can pay a reasonable amount for relief from suffering but imposes on the doctor's circumstances and his charity.

A widow of a doctor residing in Washington writes of a government clerk whose little boy had been carried through a desperate illness and who then said to the doctor, “I know I owe you a bill and I am sorry I can't pay it, but I am buying my house and that keeps me strapped.”

A doctor writes, “I spend half my time in charity wards and clinics,” and tells of a midnight call to a suicide case which kept him up all night and required daily service for ten days. When the patient got well he sent a bill, and finally sued. But on the very day the court gave judgment for his fee the patient jumped to another state.

Red Light for German Medicine

Another doctor says Bismarck gave Germany state medicine fifty years ago and that nothing new in medi-

cine has come out of Germany, formerly a leader in scientific medical investigation, in twenty-five years, while the profession in this country has eradicated malaria, yellow fever, typhoid, diphtheria, and scarlet fever. He says, too, that his British friends say the British panel doctor is less careful, considerate and conscientious than others and that "the recipient of this service would prefer to call other than a panel doctor."

And here is a man charged \$200 for an abdominal operation who thinks the doctor robbed him to equalize his service to the poor.

"Why can't I nominate the beneficiaries of my bounty?" he asks. "Or why shouldn't the free patients be told that I, not the doctor, donated the operation?"

A fair suggestion, but listen to him. He gets \$10,000 a year, he says, after his income taxes are paid, and he thinks \$200 is too much to pay for the saving of his life.

SULFAPYRIDINE IS NOW AVAILABLE FOR TREATMENT OF PNEUMONIAS

Rahway, N. J.—Announcement was made to the medical profession today by Merck & Co., Inc., manufacturing chemists, that the important new drug "Dage-nan (Sulfapyridine Merck) is now available for the treatment of pneumococcal pneumonias. This new chemotherapeutic agent is now being distributed to hospitals and medical institutions.

Heretofore, the drug has been available only for controlled clinical investigations. In response to the widespread demand for supplies for this purpose, Merck & Co., Inc., contributed sufficient quantities to clinicians in the United States during the past eight months to treat approximately 15,000 cases of pneumonia. In many emergency cases the drug was rushed to hospitals in various parts of the country by aeroplane and special messengers.

This clinical experience, together with the extensive work done in Great Britain following the original publication by Whitby in the *Lancet* on May 28, 1938, has made it possible to offer this important drug for use by the medical profession. It is a derivative of sulfanilamide and its chemical designation is 2-sulfanilyl aminopyridine. Sulfapyridine is the official name adopted for the drug by the Council on Pharmacy and Chemistry of the American Medical Association.

AMERICAN BOARD OF INTERNAL MEDICINE, INC.

Written examinations for certification by the American Board of Internal Medicine will be held in various sections of the United States on the third Monday in October and the third Monday in February.

before August 20, 1939, for the October 16, 1939, exam-

Formal application must be received by the Secretary ination, and on or before January 1 for the February 19, 1940, examination.

Application forms may be obtained from Dr. William S. Middleton, Secretary-Treasurer, 1301 University Avenue, Madison, Wisconsin, U. S. A.

ANNUAL "RADIUM NUMBER" MISSISSIPPI VALLEY MEDICAL JOURNAL

The March issue is the Twelfth Annual "Radium Number" of the Mississippi Valley Medical Journal (incorporating the Radiologic Review), published at Quincy, Illinois. This contains ten original articles, written especially for this issue, the most of which are contributed by well-known American radiologists.

Pohle of the University of Wisconsin has an interesting article on angiofibroma and gives a case report showing an excellent result with interstitial radium. Jorstad of St. Louis shows the effectiveness of interstitial radiation in certain locations. Levin of New York City shows the importance of effective radium therapy in prostatic and bladder cancer. Swanberg of Quincy has a valuable contribution entitled "What Radiation Technic Gives the Best Clinical Results in Uterine Cervical Cancer?", which is a statistical study of the five-year end-results in 3,759 treated patients. There are a number of other interesting articles, including an editorial on "The Radium Rental Controversy"; in the latter, the editor points out the evils of the recently inaugurated long time, unsupervised, radium "leasing plan" and compares it with the more conservative, short time, supervised, radium "rental plan" which has been in use for the last quarter of a century.

UNITED STATES CIVIL SERVICE EXAMINATION ASSOCIATE MEDICAL OFFICER, \$3,200 A YEAR (General Practice) Veterans' Administration

Applications must be on file with the United States Civil Service Commission at Washington, D. C., not later than the following dates—

(a) April 10, 1939, if received from States other than those named in (b) below.

(b) April 13, 1939, if received from the following States: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

The United States Civil Service Commission announces an open competitive examination for the position named above. Vacancies in this position in Washington D. C., and in the field, and in positions requiring similar qualifications will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion. The salary named above is subject to a deduction of 3½ percent toward a retirement annuity.

A further deduction of at least \$480 a year will be made for quarters, subsistence, and laundry when furnished by the Government.

EMPLOYMENT LISTS.—Permanent employees in the classified service will, upon earning a passing mark in this examination, have their names placed upon a separate list of eligible Government employees, which list may be certified separately to fill appropriate vacancies in accordance with the Civil Service rules.

DUTIES.—To perform professional duties as a doctor of medicine in active practice in hospitals, in dispensaries, in facilities, or in the field.

APPLICATION FORMS.—The necessary forms may be obtained from the *Secretary, Board of United States Civil Service Examiners*, at any first-class post office, from the United States Civil Service Commission, Washington, D. C., or from the United States Civil Service district office at any of the cities given below (the title of the examination desired should be stated):

Atlanta, Ga., New Post Office Building.
 Boston, Mass., Post Office and Courthouse Building.
 Chicago, Ill., New Post Office Building.
 Cincinnati, Ohio, U. S. Post Office and Courthouse.
 Denver, Colo., Post Office Building.
 New Orleans, La., Customhouse.
 New York, N. Y., Federal Building, Christopher St.
 Philadelphia, Pa., Tenth Floor, Gimbel Building.
 Seattle, Wash., Federal Office Building.
 St. Louis, Mo., New Federal Building.
 St. Paul, Minn., New Post Office Building.
 San Francisco, Calif., Federal Office Building.
 Honolulu, T. H., Federal Building.

Balboa Heights, Canal Zone, Secretary, Board of United States Civil Service Examiners.

San Juan, P. R., Chairman, Puerto Rican Civil Service Commission.

The exact title of the examination, as given at the head of this announcement, should be stated in the application form.

UNITED STATES CIVIL SERVICE EXAMINATIONS

ASSOCIATE PUBLIC HEALTH NURSING CONSULTANT, \$3,200 A YEAR

ASSISTANT PUBLIC HEALTH NURSING CONSULTANT, \$2,600 A YEAR.

United States Public Health Service, Treasury Department.

Applications must be on file with the United States Civil Service Commission at Washington, D. C., not later than the following dates—

(a) April 10, 1939, if received from States other than those named in (b), below.

(b) April 13, 1939, if received from the following States: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

The United States Civil Service Commission announces open competitive examinations for the positions named above. Vacancies in these positions in the field, and in positions requiring similar qualifications, will be filed from these examinations, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion. The salaries named above are subject to a deduction of $3\frac{1}{2}$ per cent toward a retirement annuity.

EMPLOYMENT LISTS.—Permanent employees in the classified service will, upon earning a passing mark in this examination, have their names placed upon a

separate list of eligible Government employees, which list may be certified separately to fill appropriate vacancies in accordance with the Civil Service rules.

DUTIES.—*Associate Public Health Nursing Consultant.*—Under general supervision, but with considerable individual responsibility, to perform the following and related duties: To advise State health administrators with regard to the organization and administration of public health nursing within the respective States; to assist State public health nursing directors in planning and arranging staff education programs including both in-service training and postgraduate study; to demonstrate the conduct of institutes for groups of public health, nurses on such subjects as health teaching, syphilis control, tuberculosis nursing, acute communicable disease nursing, program planning, public health nursing supervision, maternal hygiene, child hygiene, or orthopedic nursing; to make surveys and studies of public health nursing services and to prepare reports and recommendations on such surveys; to collect public health nursing statistics and assist in the analysis and interpretation of the data collected; and to assist the public health nursing schools by keeping them informed with regard to public health nursing needs in their areas and helping to arrange for satisfactory field experience for their students.

Assistant Public Health Nursing Consultant.—Under direct supervision, to assist in performing any or all of the functions performed by Associate Public Health Nursing Consultant.

Application forms may be obtained from the Secretary, and *Board of United States Civil Service Examiners*, at any first class post office, from the United States Civil Service Commission, Washington, D. C. United States Civil Service District Office at any of the cities given below. The exact title of the examination, as given at the head of this announcement should be stated in the application form.

Atlanta, Ga., New Post Office Building.
 Boston, Mass., Post Office and Courthouse Building.
 Chicago, Ill., New Post Office Bldg.
 Cincinnati, Ohio, U. S. Post Office & Courthouse.
 Denver, Colo., Post Office Building.
 New Orleans, La., Customhouse.
 New York, N. Y., Federal Building, Christopher St.
 Philadelphia, Pa., Tenth Floor, Gimbel Building.
 Seattle, Wash., Federal Office Building.
 St. Louis, Mo., New Federal Building.
 St. Paul, Minn., New Post Office Building.
 San Francisco, Calif., Federal Office Building.
 Honolulu, T. H., Federal Building.

Balboa Heights, Canal Zone, Secretary, Board of United States Civil Service Examiners.

San Juan, P. R., Chairman, Puerto Rican Civil Service Commission.

UNITED STATES CIVIL SERVICE EXAMINATIONS

Associate Health Education Specialist, \$3,200 a year.
 Assistant Health Education Specialist, \$2,600 a year.

United States Public Health Service, Treasury Department.

Applications must be on file with the United States Civil Service Commission at Washington, D. C., not later than the following dates:

(a) April 17, 1939, if received from States other than those named (b), below.

(b) April 20, 1939, if received from the following States: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming. This additional period is granted (because of the longer time required in transit) for receipt of applications from persons actually in the States named in (b) at the time of filing application, and from persons elsewhere who, before filing their applications with the Commission, send them to points in those States for the execution of the Officer's Certificate of Residence.

The United States Civil Service Commission announces open competitive examinations for the positions named above. Vacancies in these positions in Washington, D. C., and in the field, and in positions requiring similar qualifications will be filled from these examinations, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion. The salaries named above are subject to a deduction of 3½ per cent toward a retirement annuity.

Application Forms. The necessary forms may be obtained from the secretary, Board of U. S. Civil Service Examiners, at any first class Post Office, from the United States Civil Service Commission, Washington, D. C.

The exact title of the examination desired, as given at the head of this announcement, should be stated in the application form.

ALLEGED RESIGNATION FROM THE GROUP HEALTH INSURANCE ASSOCIATION

The *Jackson County (Mo.) Medical Society Bulletin* is responsible for the following taken from the *Baltimore Sun*.

Washington, D. C.:

"The *Baltimore Sun* of January 11 last reports from its Washington Bureau that Group Health Association, Inc., has lost the services of its director of the department of internal medicine.

"Dr. Richard H. Price is quoted as saying that he was leaving the Association because it provided 'unsatisfactory medical service.' He is reported to have claimed that some members were required to wait as long as a week to see a doctor when they should have been seen at once, and that in general members are 'treated like a herd of sheep,' instead of receiving the sort of service available to private patients.

"Other complaints were that too many physicians were often sent to see one patient, rather than to arrange for one man to see the illness through. Many times the second and third doctors know nothing of the case history. It was also stated that there was

unnecessary delay before important surgery could be performed.

"All charges were denied by the president of the association.

"We do not know Dr. Price who is retiring after over a year of service with the organization and we do not know whether the charges are exaggerated or purely trumped up. We do not know whether personal jealousy or hatreds might be responsible for one to leave such employ. But here are the first whisperings of dissension behind the lines of the opposition and we would like to know so very much more about it."

QUALIFIED APPLICANTS WANTED FOR STATE EMPLOYMENT

Applications will be accepted only if applicants clearly indicate thereon that they possess the minimum education and experience required for the position as set forth on this bulletin.

Applications must be made out on official application blanks, procurable in Sacramento at 1025 P street; in San Francisco at 108 State Building; in Los Angeles at 401 State Building; in San Diego at the San Diego Civil Service Commission. Library Annex, 9th and E streets, or by writing to any of these offices.

Citizenship: All applicants must be full United States citizens.

Veteran Preference: Proof of actual service must be submitted with application.

Fingerprinting: The State Personnel Board may require fingerprinting of all applicants for the examination, either at the time of the examination or at the time of certification to the position.

Medical and Physical requirements, as announced, must be met. Candidates may be rejected for any deficiency, abnormality, or disease that tends to impair health or usefulness such as defective vision, heart and lung diseases, uncontrolled hernia, paralysis and defective hearing.

No sample questions available!

The State Personnel Board is not connected with, nor does it recommend, any civil service coaching school.

State Personnel Board, Louis J. Kroeger, Executive Officer.

Senior Interne; Student Interne (open to men and women).

Facts Concerning Examinations

Filing of Applications: Applications filed at the office of the State Personnel Board must be filed not later than the close of the business day December 30, 1939. Applications filed by mail must be addressed to the State Personnel Board, 1025 P Street, Sacramento.

Purpose of Examinations: To obtain eligibles to fill anticipated vacancies at the various state institutions.

Location of Employment: Vacancies may occur at any of the various state institutions located throughout the state.

Note: Applications may be filed at any time during 1939 and will be rated as soon as they are received by the State Personnel Board. If a candidate's rating on education, experience, and fitness is high enough to

qualify him in the examination, his name will immediately be placed on the eligible list in accordance with his rating.

Senior Interne The Position

Duties: Under the general supervision of a staff physician, to assist with the medical work in a state institution for the mentally diseased or deficient, by performing routine medical tasks, including making rounds of wards with a physician and assisting him in giving medical treatment to patients or inmates, giving first aid treatments, assisting with minor and major surgical operations, giving anesthetics, tube-feeding patients, attending clinics and staff meetings, recommending to physicians therapeutic treatments for patients or inmates, doing pathological and X-ray laboratory work, keeping records and preparing histories of cases under observation and treatment.

Entrance Salary: \$50 a month and maintenance for self and family. Employees maintaining an efficiency rating of 80 per cent or better may receive, subject to availability of funds, annual salary increases of \$10 until a maximum of \$90 a month is reached.

Entrance Requirements

Education and Experience: Successful completion of the academic course of an approved medical school, including or supplemented by a one-year internship.

Age Limits: 24 to 40 years.

Scope of Examination

A written examination will not be required of applicants for positions in this class. Rating of applicants will be based on:

Education, experience and fitness based on investigation and appraisal of scholastic record.

Note: An applicant for either examination must submit with his application either (1) a transcript of his record from medical school, or (2) authorize the State Personnel Board to obtain such transcript from the university at the applicant's expense.

Medical Examination

1. Good health and freedom from disabling defects and communicable diseases.

Medical examination will be made by an authorized civil service examining physician whose fee of \$1.00 must be paid by the candidate. (Required only of candidates who qualify in the rating of education, experience, and fitness.)

Student Interne The Position

Duties: Under the immediate supervision of a staff physician, as a medical student, to assist with medical work in a state institution for the mentally diseased, by performing routine medical tasks, including making rounds of wards with a physician and assisting him in giving medical treatment to patients, giving first aid treatments, assisting with surgical operations, tube-feeding patients, attending clinics and staff meetings, observing the treatment of special case, assisting with pathological and X-ray laboratory work, keeping records and preparing histories of cases under observation and treatment.

Entrance Salary: \$25 a month and maintenance. Employees maintaining an efficiency rating of 80 per cent or better may receive, subject to availability of funds, annual salary increases of \$5 until a maximum of \$45 a month and maintenance is reached.

Entrance Requirements

Education: Successful completion of a four-year academic course in an approved medical school, or registration and attendance in the final year of such a course.

Age Limits: 23 to 40 years.

Scope of Examination

A written examination will not be required of applicants for positions in this class. Rating of applicants will be based on:

Education, experience and fitness based on investigation and appraisal of scholastic record.

Medical Examination

1. Good health and freedom from disabling defects and communicable diseases.

Medical examination will be made by an authorized civil service examining physician whose fee of \$1.00 must be paid by the candidate. (Required only of candidates who qualify in the rating of education, experience, and fitness.)

PNEUMONIA SERUM AND LABORATORY TYPING SERVICE

Serum for the treatment of pneumonia patients suffering from Types I, II, V, VII, IV and VIII is now available *free* to physicians from the State Department of Public Health, if the *typing* is done in a laboratory approved for that purpose by the Department. To facilitate serum distribution, 12 local serum centers and 95 approved laboratory typing stations have been established at strategic points throughout the State. Continuous day and night service is maintained at all *serum centers* for both typing and serum distribution. Serum centers and typing stations now ready to function are listed below:

SERUM AND TYPING

Down-State

Carbondale—State Diagnostic Laboratory, Normal University.

Champaign—State Diagnostic Laboratory, 307 S. Wright St.

East St. Louis—East Side Health District, 325 E. Broadway.

Peoria—Methodist Hospital, 221 Glen Oak St.

Rockford—Rockford Hospital, Court and Chestnut Sts.

Springfield—State Diagnostic Laboratory, Capitol Building.

Chicago Area

Chicago—State Diagnostic Laboratory, 1800 W. Fillmore St.; Billings Memorial Hospital, 950 E. 59th St.

Evanston—City Health Department, 1806 Maple Ave.; Evanston Hospital Laboratory, 2650 Ridge Ave.

Oak Park—City Health Department, Euclid Ave. at State; West Suburban Hospital, 518 N. Austin.

TYPING ONLY

Down-State

Alton—Alton Memorial Hospital, Rock Springs Drive; St. Joseph's Hospital, Oak and 5th Sts.

Aurora—Copley Hospital Laboratory, Lincoln and Western Ave.

Belleville—St. Elizabeth's Hospital Laboratory, 328 W. Lincoln.

Bloomington—Markowitz Clinic Laboratory, Bloomington.

Cairo—St. Mary's Hospital Laboratory, 2025 Walnut St.

Canton—Coleman Clinic, 24 N. Main St.

Champaign—Burnham City Hospital, 310 E. Springfield.

Danville—Lake View Hospital Laboratory, 312 N. Logan Ave.; St. Elizabeth's Hospital Laboratory, 602 Green St.

Decatur—Decatur & Macon Co. Hospital, End of N. Edward St.; St. Mary's Hospital Laboratory, 220 S. Webster.

East St. Louis—Christian Welfare Hospital Laboratory, 1509 Illinois Ave.; St. Mary's Hospital Laboratory, 129 N. 8th.

Effingham—St. Anthony's Hospital, Effingham.

Elgin—Elgin Municipal Laboratory, Elgin.

Elmhurst—Elmhurst Community Hospital, 189 Avon Road.

Freeport—St. Francis' Hospital, 1209 S. Walnut.

Galesburg—State Laboratory, Cottage Hospital.

Geneva—Community Hospital Laboratory, Geneva.

Highland—St. Joseph's Hospital Laboratory, Highland.

Jacksonville—Our Saviour's Hospital Laboratory, 446 E. State St.

Joliet—St. Joseph's Hospital Laboratory, 426 N. Broadway; Silver Cross Hospital Laboratory, Eagle and Walnut Sts.

La Salle—Hygienic Institute, La Salle.

Lincoln—St. Clara's Hospital Laboratory, 6th and Maple.

Litchfield—St. Francis' Hospital Laboratory, Litchfield.

Moline—Lutheran Hospital Laboratory, 502 5th Ave.

Ottawa—Ryburn Memorial Hospital Laboratory, 701 Clinton St.

Pana—Huber Memorial Hospital Laboratory, Pana.

Quincy—Blessing Hospital Laboratory, 1000 Spring St.; Frank Cohen, M.D., Clinical Laboratory, Quincy; St. Mary's Hospital Laboratory, 1400-1500 Broadway.

Rockford—Rockford Health Department, City Hall.

Springfield—St. John's Hospital Laboratory, 7th and Mason; Springfield Hospital Laboratory, 1201 N. 5th St.

Sterling—Sterling Public Hospital Laboratory, 1701 First Ave.

Urbana—Mercy Hospital Laboratory, 1412 W. Park.

Waukegan—St. Therese's Hospital Laboratory, W. Washington St.; Victory Memorial Hospital Laboratory, 1324 N. Sheridan Rd.

TYPING ONLY

Chicago Area

Blue Island—St. Francis' Hospital Laboratory, 139 S. Gregory St.

Chicago—Abel Laboratories, Inc., 7 W. Madison; Acme Clinical Laboratory, 7910 S. Cottage Grove; Augustana Hospital Laboratory, 411 Dickens; Chicago Board of Health, City Hall, 121 N. La Salle; Chicago Memorial Hospital, 660 Groveland Park; Children's Memorial Hospital, 707 Fullerton; The Clinical Laboratory, 1180 E. 63rd; Cook County Hospital, Wood and Harrison Sts.; Edgewater Hospital Laboratory, 5700 N. Ashland; Englewood Hospital Laboratory, 6001 S. Green; Franklin Blvd. Hospital Laboratory, 3230-40 W. Franklin; Garfield Park Community Hospital, 3813-25 W. Washington; Grant Hospital Laboratory, 551 Grant Pl.; Illinois Central Hospital Laboratory, 5800 Stony Island; Jackson Park Hospital Laboratory, 7531 Stony Island; Lutheran Deaconess Hospital Laboratory, 1138 N. Leavitt St.; Mercy Hospital Laboratory, 2537 Prairie Ave.; Michael Reese Hospital Laboratory, 2839 Ellis Ave.; Moore Clinical Laboratory, 25 E. Washington; Mt. Sinai Hospital Laboratory, 2750 W. 15th Pl.; Norwegian-American Hospital Laboratory, 1044 N. Francisco; Osteopathic Clinical Laboratory, 5200 S. Ellis; Passavant Hospital Laboratory, 303 E. Superior; Presbyterian Hospital Laboratory, 1753 W. Congress; Ravenswood Hospital Laboratory, 1931 Wilson; Research & Educational Hospital, 1819 W. Polk, U. of I.; Roseland Community Hospital, 45-67 W. 111th St.; St. Anne's Hospital Laboratory, 4950 Thomas St.; St. Anthony dePadua Hospital Laboratory, W. 19th and S. Marshall; St. Elizabeth's Hospital Laboratory, 1431 N. Claremont; St. Joseph's Hospital Laboratory, 2100 Burling; St. Luke's Hospital Laboratory, 1439 S. Michigan; St. Mary of Nazareth Hospital Laboratory, 1120 N. Leavitt St.; Swedish Covenant Hospital Laboratory, 5145 N. California; Washington Blvd. Hospital Laboratory, 2449 Washington Blvd.; Wesley Memorial Hospital Laboratory, 2449 S. Dearborn; Woodlawn Hospital Laboratory, 6058 Drexel Ave.

Evanston—St. Francis' Hospital Laboratory, 355 Ridge Ave.

Highland Park—Highland Park Hospital Laboratory, 650 Homewood Ave.

Melrose Park—Westlake Hospital Laboratory, 612 N. 12th Ave.

Oak Park—Lewis R. Hill Clinical Laboratory, 1011 Lake; Oak Park Hospital Laboratory, 525 Wisconsin.

Serum is free from any of the centers for any patient suffering from either of the types of pneumonia enumerated. The diagnostic typing service is available free *only* from the State and municipal laboratories designated. All other typing stations make a charge for this service. Physicians are asked not to request serum unless the typing has been done in a laboratory approved by the Department nor for patients ill with pneumonia for more than 96 hours. All unused serum should be returned promptly to the center and a report rendered upon the use of serum in each case.

ADDITIONAL APPROVED LABORATORIES

Typing Only

Freeport—Deaconess Hospital, Freeport.

Maconb—Roscoe F. Millet, 120½ S. Side Square.

Robinson—Brooks & Teasley Clinical Laboratory, New Otey Bldg.

Chicago—Central X-Ray and Clinical Laboratory, 58 E. Washington.

POST-GRADUATE MEDICAL INSTRUCTION
IN GERMANY

The German authorities for post-graduate medical instruction have arranged the following international courses for specialists for the summer of 1939:

1. In Hamburg: Dermatological and venereal diseases, ray Therapy. Place: Dermat. Univ. Clinic (26. 6. — 1. 7. 1939). Fee: RM 60.—

2. In Hamburg: Radiology (especially X-ray treatment). Place: Univ. Röntgen Institute. (3. — 8. 7. 1939). Fee: RM 60.—

3. In Vienna: Dermatological and venereal diseases, ray Therapy. Place: Dermat. Univ. Clinic. (26. 6. — 1. 7. 1939). Fee: RM 60.—

4. In Vienna: Cosmetics and plastics (dermatological, surgical, otologicals undersections). Place: Several Clinics of Vienna. (3. — 15. 7. 1939). Fee for the total course: RM 120.—

A. Dermatological part (3. — 5. 7. 1939). Fee: RM 30.—

B. Surgical part (6. — 12. 7. 1939). Fee: RM 70.—

C. Otological part (13. — 15. 7. 1939). Fee: RM 35.—

5. In Vienna: Urology. Place: II. Surg. Clinic (Univ.). (17. — 22. 7. 1939). Fee: RM 60.—

6. In Vienna: Diseases of the teeth, mouth and jaw. Place: Gen. Hosp. (17. — 22. 7. 1939). RM 70.—

7. In Vienna: Thoracical surgery. Place: II. Surg. Univ. Clinic. (24. — 29. 7. 1939). Fee: RM 70.—

8. In Cologne: Abdominal Surgery. Place: Surg. Univ. Clin. (31. 7. — 5. 8. 1939). Fee: RM 70.—

9. In Bechum and Isenkirchen-Buer: Surgery of accidents and of the limbs, including expert opinions on accidents. Place: The Hospitals "Berg annsheil I and II." (7. — 12. 8. 1939). Fee: RM 70.—

10. In Cologne: Roentgenology for accident surgery. Place: Univ. B-ray Institute. (14. — 15. 8. 1939). Fee: RM 30.—

11. In Cologne: Orthopedy. Place: Orth. Univ. Clinic. (16. — 19. 8. 1939). Fee: RM 50.—

12. In Hohenlychen: Plastic surgery; treatment by means of exercises, and compensatory athletics. Place: The Sanatorium. (21. — 23. 8. 1939). Fee: RM 35.—

13. In Vienna: The cranium in Roentgenology and clinic. Place: General Hospital. (31. 7. — 5. 8. 1939). Fee: RM 70.—

14. In Munich: Roentgenology for internists and surgeons. Place: I. Med. Univ. Clinic. (26. 6. — 1. 7. 1939). Fee: RM 60.—

15. In Breslau: Diagnostics of the diseases of the digestion and the stomach. Place: Med. Univ. Clinic. (26. — 2. 6. 1939). Fee: RM 35.—

16. In Munich: Diseases of the blood, nerves and joints, of metabolism. Endocrinology. Vitamines. Place: I. and II. Med. Univ. Clinic (3. — 8. 7. 1939). Fee: RM 50.—

17. In Vienna: Dietetics. Place: I. Med. Univ. Clinic. (10. — 15. 7. 1939). Fee: RM 50.—

18. In Berlin: Infectious, heart, circulation and kidney diseases. Place: Rud. Virchow-Krankenhaus. (17. — 22. 7. 1939). Fee: RM 50.—

19. In Lübeck: Allergy. Place: Gen. Hospital. (24. — 29. 7. 1939). Fee: RM 50.—

20. In Frankfurt a/M.: Neurology, Psychiatry, psychotherapy. Place: Univ. Neurol. Clinic. (31. 7. — 5. 8. 1939). Fee: RM 50.—

21. In Berlin: Pediatrics: Prophylaxis in childhood, nutrition, diseases connected with metabolism; neurology, psychiatry, questions connected with children difficult to bring up. Hereditary pathology. Place: Univ. Ped. Clinic, Kaiserin Auguste-Viktoria-Haus, Kaiser.— und Kaiserin Friedrich Krankenhaus. (26. 6. — 1. 7. 1939). Fee: RM 50.—

22. In Cologne: Pediatrics: Infectious diseases and diseases of the circulation and kidneys; allergy, social welfare. Place: Ped. Univ. Clinic. (3. — 8. 7. 1939). Fee: RM 50.—

23. In Leipzig: The old and modern therapeutic tasks of the gynaecologist. Place: Gyn. Univ. Clinic. (3. — 8. 7. 1939). Fee: RM 70.—

24. In Leipzig: Functional gynaecology. Place: Gyn. Univ. Clinic. (10. — 15. 7. 1939). Fee: RM 70.—

25. In Tübingen: Otolaryngology, rhinology, laryngology. Place: Otol. Univ. Clinic. (26. 6. — 8. 7. 1939). Fee: RM 150 (with operation course), without operation course: RM 100.—

26. In Halle: Ophthalmology. Place: Univ. eye clinic. (26. 6. — 1. 7. 1939). Fee: RM 75.—

All courses will be held in the German language. The number of participants is limited.

Informations and prospectuses through:

Ärztliches Fortbildungswesen, Berlin N. W. 7., Robert-Kochplatz 7., Kaiserin-Friedrich-Haus.

All doctors with full German citizenship (Reichsbürger) as well as doctors of foreign nationality may take part.

Foreign doctors and German doctors resident abroad receive a 60 per cent reduction in fares on the German State Railways, and through the purchase of "Register Marks" with foreign currency doctors resident abroad will make a considerable saving; foreign doctors are advised to consult a bank in their own country before their departure.

The famous Black Death (Bubonic Plague) of the 14th century resulted in the extinction of one-quarter of the population of the world or some sixty millions of people.—*Caprio*.

PICTURESQUE ROCKFORD



FAUST HOTEL



AERIAL VIEW OF PORTION OF DOWNTOWN ROCKFORD



LINCOLN JUNIOR HIGH SCHOOL



FINE RESIDENCE AND GARDENS



EASTERN MASONIC STAR HOME



SWIMMING—TENTH AVENUE PUBLIC SCHOOL



BEAUTIFUL PARK—SINNISSIPPI



ROCKFORD ARMORY HALL OF HEALTH

ROCKFORD, ILLINOIS

Rockford, Illinois, one of the nation's great industrial centers, impresses its visitors as a city of homes in a setting of unusual beauty in the heart of the Rock river valley. Midway between Chicago and the Mississippi river, it is the gateway to the vacation lands of the north and is at the juncture of highways linking the Atlantic with the Pacific and Canada with Mexico.

Founded in 1834, Rockford has seen its great growth since the turn of the century. Today its estimated population is 95,000, with 56 per cent. of the families residing in their own homes. Actual value of real estate holdings is estimated at more than \$150,000,000.

Furniture of outstanding quality, produced in 25 factories, and machine tools known to precision manufacturers throughout the world, are two of the most important Rockford products. In all, more than 300 industries produce in excess of 6,000 products, ranging from silk hosiery to huge machines capable of machining locomotive frames in a single operation.

Rockford has superb park facilities covering more than 1,000 acres and including three splendid public golf courses which make the game available to all here at a cost lower than offered in any other American city. Rockford also supports three private golf courses, while the county forest preserve commission operates a public course a short distance north of the city.

The city is also known as the cradle of baseball in the middle west. In the days shortly after the Civil war the Forest City ball team was accredited the best in the nation after it had defeated the Washington Nationals, regarded as the "Yankees" of their day. Players on the Rockford team were two of the game's early greats, Al. G. Spalding, founder of the sporting goods house which still bears his name, and Ross Barnes, famous infielder.

In recognition of its importance in the early days of the national sport the city is commemorating baseball's centennial in the design of the 1939 vehicle tax sticker.

Four miles south of Rockford is the United States military reservation, Camp Grant, where more than one million soldiers trained for the World war. It is the site of the annual encampment of the 33rd Division of the Illinois National Guard. The camp of Civil war days, Camp Fuller, was located on the banks of the Rock river

in a fine residential territory now designated by Sherman street, Guard street and similar names.

Newest addition to the public buildings is the National Guard armory, North Main street, completed at a cost of \$350,000. It is the site of the "Hall of Health" being presented in conjunction with the Society's convention. The \$750,000 Federal building and postoffice is also a recent acquisition to the roster of public buildings.

The city has an excellent health record, credited in a large measure to extensive public health work. There are three hospitals, St. Anthony's, Rockford and Swedish-American, and a well-equipped county hospital north of the city.

As might be expected in a city of homes, Rockford has an outstanding school system. At the present time a \$3,500,000 building program is under way. It will provide the city with two new senior high schools, a junior high school and a large grade school addition. At the present time there is one senior high school, two large junior high schools and 20 grade schools. This is in addition to the parochial school system, with six grade schools and two high schools.

For 90 years Rockford college, a school of liberal arts for women, has played an important part in community life. Its distinguished alumni included the late Jane Addams, founder of Chicago's Hull House.

Starting his fiftieth year of service with the city is Chief of Police A. E. Bargren, head of a department which gives Rockford a freedom from crime unusual in a city of its size. He is the oldest chief of police in years of service in the United States.

Rockford, with 10 per cent. of the nation's population within a radius of 150 miles, is a substantial, steadily growing American city which, founded a little more than 100 years ago, is certain to continue its development.

HORSES MAY CARRY ENCEPHALITIS

A recent report from the Rockefeller Institute announced that an outbreak of human "sleeping sickness" (encephalitis lethargica), which occurred in Massachusetts last September, had been traced to horses suffering from encephalomyelitis, a well known animal disease, never heretofore connected with a human malady.

Since the viruses of many diseases virtually disappear between epidemics, many attempts have been made to find non-human "carriers," but hitherto without success. This discovery may prove to be highly important.

Program

of the

Ninety-Ninth Annual Meeting

ILLINOIS STATE MEDICAL SOCIETY

Rockford, Illinois, May, 2, 3, and 4, 1939



1939 Official Program

TUESDAY, MAY 2, 1939

9:00 A. M.—Section on Eye, Ear, Nose and Throat. Central States Society of Industrial Medicine and Surgery. Physicians' Association—Department of Public Welfare. Illinois Medical Editors Association.

1:00 P. M.—Opening Meeting, Illinois State Medical Society.

1:30 P. M.—Oration in Medicine. Leroy Edward Parkins, Boston, Massachusetts. "Integration of Personality Factors in Health and Disease."

2:30-5:00 P. M.—Meetings of all Scientific Sections.

3:00 P. M.—First Meeting of the House of Delegates.

6:00 P. M.—Secretaries' Conference,—Dinner and Meeting. Veterans' Service Committee,—Dinner and Meeting.

9:00 P. M.—THE STAG.

WEDNESDAY, MAY 3, 1939

9:00 A. M.—Joint Session of Sections on Medicine, Surgery, and Radiology. Section on Eye, Ear, Nose and Throat. Section on Pediatrics.

11:00 A. M.—Oration in Surgery. H. Winnett Orr, Lincoln, Nebraska. "The Prevention and Cure of Local and General Infection in Compound Fractures and Other Open Wounds."

1:30 P. M.—President's Address. Samuel E. Munson, Springfield. "Shall Organized and Scientific Medicine Continue Its Progress?"

2:30 P. M.—Sections on Medicine; Surgery; Eye, Ear, Nose and Throat; Public Health and Hygiene; and Obstetrics and Gynecology.

7:00 P. M.—President's Dinner followed by Dance and Bridge.

THURSDAY, MAY 4, 1939

9:00 A. M.—Joint Session of all Scientific Sections. Second Meeting of the House of Delegates. Induction of President-Elect immediately before closing of the session.

Registration will begin at 8:00 A. M. Tuesday, May 2, and continue throughout the meeting. All visiting physicians are welcome, and a Guest Badge will permit you to attend any meeting.

MEETINGS OF THE HOUSE OF DELEGATES

TUESDAY AFTERNOON, MAY 2, 1939 ARMORY

3:00—First meeting of the House of Delegates called to order by the President, Samuel E. Munson, for Reports of Officers, Councilors, Committees, Appointment of Reference Committees, Introduction of Resolutions, and for the transaction of other business which may come before the House.

THURSDAY MORNING, MAY 4, 1939

LEVIN FAUST ROOM—FAUST HOTEL

9:00—Second meeting of the House of Delegates called to order by the President for the Election of Officers, Councilors, Committees, Delegates and Alter-

nates to the American Medical Association, Reports of Reference Committees and action on same, Action on Resolutions, and for the transaction of other business to come before the House.

GENERAL SESSIONS

OPENING MEETING

TUESDAY AFTERNOON, MAY 2, 1939

HOTEL FAUST

BLUE ROOM

1:00—Meeting officially opened by President, S. E. Munson.

Invocation by Rev. G. W. Ridgeway, Rector, Emmanuel Episcopal Church, Rockford.

Address of Welcome by Mayor of Rockford, Charles F. Brown.

Address of Welcome by President of Winnebago County Medical Society, N. C. Bullock, Rockford.

Report of Chairman, Committee on Arrangements, J. S. Lundholm, Rockford.

1:30—Oration in Medicine—Leroy Edward Parkins, Boston, Massachusetts. "Integration of Personality Factors in Health and Disease."

WEDNESDAY MORNING, MAY 3, 1939

11:00—Oration in Surgery—H. Winnett Orr, Lincoln, Nebraska. "The Prevention and Cure of Local and General Infection in Compound Fractures and Other Open Wounds."

WEDNESDAY AFTERNOON, MAY 3, 1939

1:30—President's Address—Samuel E. Munson, Springfield. "Shall Organized and Scientific Medicine Continue Its Progress?"

THURSDAY MORNING, MAY 4, 1939

Induction of the President-Elect.

Immediately before the closing of the meeting of the House of Delegates, the President-Elect, James H. Hutton, Chicago, will be inducted into the office of President of the Illinois State Medical Society by the retiring President, Samuel E. Munson of Springfield.

All members and guests at the meeting may be present at this interesting function.

SECTION PROGRAMS

SECTION ON MEDICINE

Robert KeetonChairman
E. M. Stevenson.....Secretary

TUESDAY AFTERNOON, MAY 2, 1939

HOTEL FAUST

BLUE ROOM

2:30—"Current Conceptions in Epilepsy."
Meyer Brown, Chicago.

The pessimistic attitude of classic writers toward epilepsy is not fully justified. Recent studies of persons with idiopathic epilepsy indicate that a large proportion of these patients have a favorable outlook for continued mental health, for control of their seizures by medication and for healthy offspring.

Discussion opened by Warren G. Murray, Dixon.

3:00—"Differential Diagnosis of Low Back Pain."

Samuel J. Lang, Evanston.

The diagnosis and differential diagnosis of low-back pain will be discussed. Emphasis will be placed on non-surgical lesions, such as arthritis, congenital deformities and the postural deformities. Lantern slides will be used to demonstrate the various types of backache under discussion.

Discussion opened by James Stark, Chicago.

3:30—"The Role of Cevitamic Acid in Various Clinical Conditions."

M. A. Spellberg, Chicago.

Recent studies of the metabolism of cevitic acid in men have revealed that a daily intake of 20 to 30 mg. is a minimal value compatible with health. The optimal requirements are higher. In infections with fever (notably tuberculosis), hyperthyroidism, malignancies, and leukemia the requirements are increased. The relationship of cevitic acid to anaphylaxis is not clear. Its value as a therapeutic agent in ulcer and lesions of gastro-intestinal tract is well established. All diets prescribed for patients should be assayed for their cevitic acid value.

Discussion opened by H. G. Poncher, Chicago.

4:00—"Diagnostic Data in Intestinal Tuberculosis."

Leo L. Hardt, Chicago.

Six hundred thirty-one cases of pulmonary tuberculosis have been studied for intestinal tuberculosis during the past five years, seventy-nine of which came to post.

The history, symptoms, physical findings, x-ray, proctoscopic, blood and stool examinations served as routine for diagnosis and differential diagnosis.

The incidence of the more frequent symptoms and physical findings are tabulated.

The postmortem material data were regarded as a basis of the diagnostic accuracy for the whole group observed.

The history, symptoms, and physical findings were found to be of superior diagnostic aid in intestinal tuberculosis than the x-ray.

The proctoscopic examination helped only twenty-four cases in a direct diagnosis of intestinal tuberculosis.

Stool examination proved helpful in a corroborative way and especially in excluding amebiasis.

Blood counts afforded no help.

The frequency of associated diseases is noted.

Discussion opened by Henry C. Sweany, Chicago.

4:30—"Gastro-Intestinal Symptoms of Upper Respiratory Infections."

John F. Carey, Joliet.

It has often been said that "infections of the respiratory tract" is the meal ticket of the pediatrician; since the general man still takes care of the majority of children these infections constitute the bulk of his pediatric practice.

The amazing variation in symptomatology makes the subject highly interesting. The gastro-intestinal symptoms of pain, vomiting, diarrhea and constipation so frequently labeled "intestinal flu, epidemic acidosis, hyperemesis heimis, etc." tests the diagnostic ability of the keenest observer as to whether or not there is true pathology present.

Discussion opened by Morris L. Blatt, Chicago.

WEDNESDAY MORNING, MAY 3, 1939

BLUE ROOM

Joint Session with Sections on Surgery and Radiology.

"Etiology and Differential Diagnosis of Gastric Hemorrhage."

M. M. Montgomery, Chicago.

Gastric hemorrhage may be massive, moderate or slight. It may occur once or repeatedly. The anatomy, and pathology of some of the etiologic lesions are considered in relation to the differential diagnosis and factors predisposing to hemorrhage. The mechanism of cessation of hemorrhage is discussed. An analysis of fatal cases with special emphasis on the ages of patients, duration of ulcer, and the associated pathologic conditions is presented.

"Treatment of Hemorrhage from the Gastro-Intestinal Tract."

Alexander Brunschwig, Chicago.

Hemorrhage from the gastro-intestinal tract, no matter how slight, should always entail a thorough examination to determine as accurately as possible its source, the principal reason being that in adults this is the first symptom detected by the patient of malignant or pre-malignant conditions which, of course, should be adequately dealt with. The significance of hemorrhage in regard to other lesions of the gastro-intestinal tract other than malignant tumors will also be considered and appropriate diagnostic and therapeutic aspects discussed.

"Intractable Peptic Ulcer."

C. H. Drenckhahn, Urbana.

The paper first defines the term, Intractable Peptic Ulcer. The various causes of intractable ulcer are enumerated in order of their importance. It is pointed out that these causes are simply exaggerations of the accepted causes for simple peptic ulcer. The therapy is usually surgical but may of necessity be medical; dependent upon such conditions as age, other complicating physician defects or upon occupation.

"Perforations of the Gastro-Intestinal Tract."

Gatewood, Chicago.

Perforations of the gastro-intestinal tract are either the result of a) an intra or extra mural trauma, or, b) inflammatory lesions. The diagnosis depends upon a carefully elicited history, physical examination, and laboratory findings, with particular reference to the x-ray. The treatment is early operative closure except where shock completely over-shadows the symptoms of perforation. The mortality rate is in direct ratio to the distance of the perforation from the cardia and the time allowed to elapse before repair is made.

"The Use of X-ray in Perforation and Hemorrhage of the Gastro-Intestinal Tract."

Earl R. Crowder, Evanston.

A discussion and demonstration of the use of x-ray as a diagnostic aid in hemorrhage and perforation in the gastro-intestinal tract.

WEDNESDAY AFTERNOON, MAY 3, 1939

BLUE ROOM

2:30—Chairman's address.

"The Advantages of the Physiological Viewpoint in Medicine."

Robert Keeton, Chicago.

SYMPOSIUM ON PNEUMONIA

2:50—"Diagnosis in the Acute Pneumonias."

Courtney N. Hamlin, Rockford.

- A. Clinical diagnosis
- B. X-ray diagnosis
- C. Evaluation of blood counts
- D. Sputum examination for bacteria
- E. Neufeld typing
- F. Typing without sputum
- G. Use of blood cultures, sputum cultures mouse inoculation
- H. Agglutination tests
- I. Experimental data of practical significance.

3:10—"General Management of Pneumonia."

M. Herbert Barker, Chicago.

Since typing and specific pneumonia serum treatment may not be available or advisable to approximately 30% of the pneumonia sufferers, the physician faces the problem of supplying proper medical and nursing care. Fluids, food, and nursing measures together with clinical and experimental observations upon oxygen therapy, mineral and acid base factors in the supportive care of the patient, are to be reviewed.

3:30—"Serum and Drug Therapy in Pneumonia."

I. F. Volini, and Robert O. Levitt, Chicago.

This report analyzes the experience with one-hundred and fifty pneumonia patients treated by serum administration. In the majority, rabbit serum was employed. The advantages of rabbit serum are enumerated. The methods of testing for sensitivity, the dosage, the technique of administration, and results are presented. A discussion of sulfanilamide and sulfanilamide pyridine indicates their action in a series of pneumonia patients. Consideration is given to dosage, the mode of administration, the toxic effects, and the drug concentration in the blood.

3:50—"The Roentgen Ray in the Management of the Pneumonias."

(Lantern Demonstration)

Edwin L. Rypins, Bloomington.

The slides will be shown demonstrating particularly the changes seen in chest films in lobar pneumonia. Differential diagnosis of lobar and bronchial pneumonia will be made. The complications of the pneumonias will be stressed particularly concerning their diagnosis by means of Roentgen Ray of the Chest. Differential diagnosis by means of the Roentgen Ray will be explained. A short period of time will be spent on Roentgen Ray therapy of Pneumonia.

4:10—"Pneumonia in Childhood."

Walter M. Whitaker, Quincy.

This paper deals with a general resume of the etiological factors, clinical types, and important diagnostic differences in the pneumonias of childhood as compared with those seen in adults. A discussion of the important points influencing the prognosis is included. Newer aspects concerning the indications for, and clinical application of sera, with other methods of treatment which have been valuable in the hands of the author, conclude the paper.

4:30—General Discussion following Symposium.

THURSDAY MORNING, MAY 4, 1939

BLUE ROOM

Joint Session with Sections on Surgery; Eye, Ear, Nose and Throat; Public Health and Hygiene; Radiology; Pediatrics; and Obstetrics and Gynecology.

PROBLEMS IN ENDOCRINOLOGY

9:00—"The Endocrines and the General Practitioner."

George B. Lake, Waukegan.

Ninety percent of cases of chronic illness show some disorders of the endocrine system, practically all of which are pluriglandular. Most of these cases are seen first by a general practitioner, who should be able to diagnose endocrine dysfunctions accurately and treat them adequately. An outline of the symptoms of the commoner endocrinopathies will be presented, and some general suggestions made regarding their treatment by oral opotherapy and the parenteral administration of potent single hormones.

9:20—"Influence of Hormones on Growth and Development."

Isaac A. Abt, Chicago.

Hormonal influence on growth begins early in pregnancy when the mother pours hormones into the fetal circulation. In the later months of pregnancy the fetal endocrine glands probably secrete the active principle in minimal amounts. The so-called "pregnancy reactions" after birth are now attributed to hormones.

The glands of internal secretion and the nervous system seem to be closely connected, especially in their joint influence on growth and development.

Hormones and vitamins both affect growth, not only directly, but through their interrelationship with each other.

The endocrine glands which have most to do with growth and development are the hypophysis and the thyroid, which seems to depend on the hypophysis; of less direct influence are the supra-renal, pineal, thymus and parathyroid glands and the pancreas.

Since treatment with hormonal extracts is still in the experimental stage, considerable conservatism should be exercised in their use.

9:40—"Endocrinology in Ophthalmology."

Elias Selinger, Chicago.

The ocular manifestations of disturbances of the glands of internal secretion may be quite obvious as exemplified by the exophthalmus of exophthalmic goitre or obscure as seen in excessive lacrimation. The structures involved vary from the skin of the lids thru all the structures of the eye to the optic tracts. A careful routine eye examination not infrequently discloses manifestations of an endocrine disturbance, while at other times special examinations such as perimetry, slit lamp examination and other special methods may have to be employed. At still other times cooperation between the ophthalmologist and endocrinologist, as well as specialists in other fields, is necessary to determine abnormalities in the function of the pituitary, thyroid, parathyroid glands, the pancreas and other glands of internal secretion. Some of the more usual ocular endocrine syndromes will be discussed in greater detail.

10:00—Diagnostic Roentgenological Aspects of Endocrine Diseases."

Cesare Gianturco, Urbana.

The essayist will discuss the roentgenological manifestations of endocrine diseases. He will present illustrative cases of tumors and disfunction of the hypophysis, enlargement of the thymus, enlargement and disfunction of the thyroid, tumors of the parathyroid glands, enlargement and tumors of the adrenal glands and will endeavor to establish the indications for the roentgenological examination.

10:20—"Surgical Treatment of Essential Hypertension."

Loyal Davis, Chicago.

We now wish to report (1) upon the results of an experimental and clinical study of the effects of supra-diaphragmatic splanchnicectomy upon hypertension. (2) We wish to report upon the results of the administration of cyanates to animals and patients with hypertension before and after supradiaphragmatic splanchnicectomy. (3) The results of the experimental production of coronary thrombosis upon hypertension in animals. (4) A discussion of the physiological explanation for the results obtained.

10:40—"The Use of Progestin in Obstetrical Complications."

Frederick H. Falls, Chicago.

The use of progestin in decreasing the sensitivity of the human uterus to stimulation by pituitrin is discussed. The potency of oily and aqueous extracts is illustrated. The use of these extracts in the treatment of habitual and threatened abortion, placenta previa, premature separation of the placenta, premature rupture of the membranes and sterility cases is considered.

11:00—"X-Ray Therapy as Applied to the More Common Forms of Disturbance of the Endocrine Glands."

F. Flinn, Decatur.

X-ray therapy has become fairly well established, as a part of the treatment of many of the common disturbances of the endocrine glands. Pathological conditions of the pituitary, the thyroid gland, the parathyroids, the thymus, the adrenals, and the ovaries which are considered amenable to x-ray therapy will

be discussed. A brief outline of the technic for treatment in the various conditions will be given.

11:20—General Discussion.

SECTION ON SURGERY

Darwin KirbyChairman
Frederick ChristopherSecretary

TUESDAY AFTERNOON, MAY 2, 1939
LEVIN FAUST ROOM

Joint Session with Central States Society of Industrial Medicine & Surgery.

SYMPOSIUM ON FRACTURES

2:30—"Treatment of Compound Fractures."

Carlo S. Scuderi, Chicago.

The treatment of compound fractures at the Cook County Hospital consists of complete debridement of the wound under general anesthesia with removal of all macerated tissue. The wound is washed with physiologic salt solution; no antiseptics are used. All forms of internal immobilization are strictly avoided. Foreign bodies, even catgut, should be limited to the minimal quantity. Loose approximation of the skin wound with interrupted silk worm sutures and voluminous dressings is routine in fresh cases. Immobilization in the form of skeletal traction or plaster cast is decided by the individual case. The aftercare consists of dry dressings alone. Only in cases with considerable infection and considerable necrotic tissue is Dakin's solution or 2 per cent urea used. Under this management 92 per cent of the compound fractures have remained clean.

Discussion opened by Ellsworth Black, Jacksonville.
"Fractures of the Elbow."

Rudolph J. Mroz, Rockford.

Fractures about the elbow joint most commonly involve the distal end of the humerus, although in discussing fractures of the elbow, injuries to the head of the radius and olecranon must also be taken into consideration. The importance of anatomical landmarks and correct interpretation of x-rays, especially in relation to the various epiphyses in the child, is emphasized. Reduction should be done as soon as possible after injury. This can usually be done by manipulation, and only occasionally need skeletal traction be used or an open reduction be necessary; immobilization is maintained with adhesive or posterior molded plaster splints for three to six weeks, depending on the type of fracture and the age of the patient. This is followed by active motion, later with heat and massage. A few case reports are given with slides demonstrating types of fractures under discussion, manners of treatment, and results.

Discussion opened by Edwin M. Miller, Chicago.

"Pin Fixation of Fracture of the Neck of the Femur."

Willis J. Potts, Oak Park.

This is a lantern slide demonstration of ten consecutive cases of fracture of the neck of the femur treated by operative fixation with Austin Moore pins. The ages ranged from 49 to 89. There were no deaths. Eight patients have solid union, one has questionable union, and one has non-union. While the advantages of operative fixation of this problem fracture are stressed the dangers and difficulties are not minimized. Operative fixation of fractures of the neck of the femur was substituted for immobilization in Whitman abduction casts in November, 1936. In order that near end results may be presented only those patients operated upon before January, 1938, are included in this report.

Discussion Opened by James K. Stack, Chicago.

"Operative Treatment of Fractures."

Paul B. Magnuson, Chicago. (Auspices of Central States Society of Industrial Medicine & Surgery.)

There are some cases of fractures which should always be considered operative. There are some in which an attempt should be made to reduce them first; if not successful, operation should be performed very soon thereafter. There are certain cases where operative procedure should not be considered until many means of colored reduction have been tried. An attempt will be made to define each group.

WEDNESDAY MORNING, MAY 3, 1939 BLUE ROOM

Joint Session with Sections on Medicine and Radiology.

9:00 A. M.—

"Etiology and Differential Diagnosis of Gastric Hemorrhage." M. M. Montgomery, Chicago.

"Treatment of Hemorrhage from the Gastro-Intestinal Tract." Alexander Brunschwig, Chicago.

"Intractable Peptic Ulcer." C. H. Drenckhahn, Urbana.

"Perforations of the Gastro-Intestinal Tract." Gatewood, Chicago.

"The Use of X-ray in Perforation and Hemorrhage of the Gastro-Intestinal Tract." Earl R. Crowder, Evanston.

(For Abstracts of Papers, See Section on Medicine.)

WEDNESDAY AFTERNOON, MAY 3, 1939 FAUST ROOM

2:30 P. M.

"Treatment of Acute and Chronic Osteomyelitis."

Paul H. Harmon, Springfield.

The clinical course of acute osteomyelitis in infants and in older children is contrasted. The treatment in the acute stage is outlined, bringing out the fact that the modern tendency in the treatment of acute osteomyelitis is conservative. The causes for prolonged drainage and chronic suppuration in chronic osteomyelitis are discussed with the indications for operation given in each instance. Specific cases are used as illustrations.

Discussion opened by Howard Hatcher, Chicago.

"Burns."

Charles L. Patton, Springfield.

Review of recent literature. Discussion of shock, toxemia and sepsis and cause death in burns. Importance of meticulous care and thorough mechanical cleansing in primary management of local lesion. Discussion of action of coagulants and rationale of their use. Comparison of various coagulants in general use.

Discussion opened by E. D. Wise, Champaign.

"Management of Local and Spreading Peritonitis Associated with Appendicitis."

Karl Meyer, Chicago.

The mortality rate of appendicitis is on the increase. In the United States seventeen out of one hundred thousand individuals die each year of this disease. Most deaths from appendicitis result from complications. Localized peritonitis occurs in nineteen per cent of acute appendicitis. Diffuse peritonitis occurs in fourteen per cent. Appendicular abscess should be managed conservatively unless it points either to the surface or to the rectum. In either case, extra-peritoneal drainage must be established. Acute spreading peritonitis is best handled by a rigid Oschner management.

Discussion opened by Marshall Davison, Chicago.
"Surgery of the Common Bile Duct."

Warren Cole, Chicago.

The clinical manifestations of stones in the common duct will be discussed briefly. Indications for opening the common duct when operating upon the gallbladder are presence of jaundice, dilation of the common duct, significant thickening of the common duct and obviously when stones can be palpated within it. The usual therapy is to remove the stone through a longitudinal incision and to drain the common duct by a T-tube for two to four weeks after operation. The value of vitamin K in treatment of hemorrhage is discussed.

Discussion opened by J. R. Buchbinder, Chicago.

THURSDAY MORNING, MAY 4, 1939 BLUE ROOM

Joint Session with Sections on Medicine; Eye, Ear, Nose and Throat; Public Health and Hygiene; Radiology; Pediatrics; and Obstetrics and Gynecology.

PROBLEMS IN ENDOCRINOLOGY

(For Complete Program and Abstracts of Papers, See Section on Medicine.)

SECTION ON EYE, EAR, NOSE AND THROAT

S. J. Meyer.....Chairman

Frank W. Brodrick.....Secretary

TUESDAY MORNING, MAY 2, 1939 HOTEL FAUST

JUNIOR CLUB ROOM—MEZZANINE FLOOR

9:00—"Suggestive Treatment of the Maxillary Sinus Subsequent to Dental Surgery."

J. Sheldon Clark, Freeport.

Plea for closer cooperation between physicians and dentists. Preventive measures by preliminary examinations of sinus, etc. In perforations following extraction, complications may be unavoidable, but require early routine care. Observing that the tooth is entirely removed may save some late worries. Suggestions for mechanical occlusion. Patient should be told of the possibility of complications.

Discussion opened by Louis A. Shultz, Rockford.

9:30—"The Contact Glass Problem."

William H. Droegemueller, Chicago.

The value of contact glasses; the present sources available for obtaining and fitting of such; the making of a corneal cast, shown by movie; the application and use of the cast for studying the problem; then a final summary as to what one might expect with present conditions.

Discussion opened by Theodore N. Zekman, Chicago.

10:00—"Acute Suppurative Otitis Media and Mastoiditis."

M. A. Glatt, Chicago.

In the diagnosis and treatment of acute suppurative otitis media and mastoiditis, it is important to consider each anatomic structure of the temporal bone as a factor in the course of the infection. The symptoms which arise may be a manifestation of either toxic reactions, irritation or actual invasion of those structures. The factors which produce the variabilities in the course of the disease and the rationale in the methods of treatment are discussed.

Discussion opened by George T. Jordan and George J. Musgrave, of Chicago.

10:30—"Clinical Roentgenographic Aspects of Petrositis."

S. M. Morwitz, Chicago.

1. A complete study of infection in the temporal bone involves proper roentgenographic exposures of this area and its proper clinical interpretation.

2. Analysis of structural set-up of the petrous portion of the temporal bone.

3. Comparison and value of Taylor and Stenver technic.

4. Importance of standard technical factors employed.

5. Clinical conclusions of the radiologic finding within the temporal bone.

6. Key films of petrous apex advisable in all mastoid cases.

Discussion opened by Gerhard Danelius, Chicago.

11:00—"An Efficient Adjunct in the Treatment of Corneal Ulcers."

Watson W. Gailey, Bloomington.

The subject, an efficient adjunct in the treatment of corneal ulcers, will deal with a method of blocking the lachrymal sac. There is no question as to the helpfulness of this simple procedure. There is no proven reason for its efficacy. This paper will deal with the technic of its application and will attempt to give the indications for its use.

Discussion opened by William R. Fringer, Rockford.

TUESDAY AFTERNOON, MAY 2, 1939

JUNIOR CLUB ROOM

INSTRUCTION COURSES

2:30—"Anatomy and Pathology of the Middle Ear Tract."

J. J. Potter, Rockford.

This instruction course covers the developmental anatomy of the middle ear tract, beginning before birth up to adult life. Also a description of pathogenesis of the middle ear and mastoid disease in various types of mastoid bone structures. The lecture will be supplemented throughout with slides of sections of normal and pathological eustachian tubes, middle ear, and mastoid processes. There will also be a number of gross specimens illustrating points of interest.

4:00—"Acute Laryngeal Obstruction; Its Causes, Pathology and Treatment."

Thomas C. Galloway and Eustace L. Benjamin, Evanston.

Special emphasis will be given to acute laryngotracheobronchitis, with discussion of symptoms and diagnosis, indications for tracheotomy and intubation. Deliberate tracheotomy over the bronchoscope and treatment of tracheobronchitis will be demonstrated by colored film. Other conditions to be considered will be general disease, tumors, trauma, cut throat and flame injury.

Pathology of laryngeal obstruction will be demonstrated with the Leitz microprojector from stained slides by Dr. Benjamin. The secondary vascular changes, atelectasis, emphysema, pneumonitis and their pathogenesis will be shown.

TUESDAY AFTERNOON, MAY 2, 1939

INSTRUCTION COURSES

2:30—"Gonioscopy."

Thomas D. Allen, Chicago.

Due to the rapid advance in methods of scientific examination of patients, one is continually confronted with the problem: is this practical? Can one obtain sufficient information from

this or that new technic to pay for the time and paraphernalia necessary? With this in mind we beg to bring a simplified method of examining the anterior chamber angle. With the Beebe skeleton loupe, a fountain pen flash light and a contact glass, a new world of information is opened up for study. Later on this may be expanded with more expensive apparatus just as an expensive camera will be better than an inexpensive one. We should learn from the simpler apparatus and this demonstration is to acquaint the ophthalmologists with the simplicity of the technic and especially its value in early glaucoma.

4:00—"Concomitant Strabismus. Some Important Details in its Diagnosis and Treatment."

George P. Guibor, Ottawa.

Concomitant esotropia must be differentiated from epicanthus, a narrow angle gamma, parietic deviations and the physiologic deviations seen during infancy. When the non-paralytic deviation is present, the oculist should determine the etiology of the squint when possible. Some of the causes are fusion defects, motility defects, anisometropia, hyperopia and amblyopia. The appropriate surgical and non-surgical treatment for each type of case will be discussed and illustrated with lantern slides.

TUESDAY EVENING, MAY 2, 1939

JUNIOR CLUB ROOM

6:30—Annual Banquet of the Section.

WEDNESDAY MORNING, MAY 3, 1939

JUNIOR CLUB ROOM

8:30—"Laryngeal Carcinoma."

L. B. Bernheimer, Chicago.

The purpose of this communication is to evaluate:

1. The indications for treatment of laryngeal carcinoma by radiation.

2. The indications for treatment of laryngeal carcinoma by surgery.

3. The end results obtained after five years by both radiological and surgical treatment of laryngeal carcinoma.

Discussion opened by Max Cutler, Chicago.

9:00—"Glaucoma vs. Cataract."

Louis Bothman, Chicago.

The patient having an increased intra-ocular tension and opacities in the crystalline lens presents the most difficult diagnosis in the realm of ophthalmology. Whether the opacities have resulted from an increased tension or whether the rise of tension resulted from the intumescent stage of an incipient cataract, is of great importance for the prognosis. A series of cases will be presented, and the results of both medical and surgical treatment of these cases will be discussed.

9:30—"Closure of Post-Auricular Fistula, following Radical Mastoidectomy."

Harold V. Wadsworth and George H. Woodruff, Joliet.

We were recently confronted by a young woman with a post-auricular fistula. Several operations had been performed including simple and radical mastoid, and one or two attempts to close the fistula. We made a study of several methods which had been used by others to close such fistulae.

We will attempt to show why we chose the particular procedure we used, which is that of Ashley. The technic will be reviewed.

10:00—"Pathology and Treatment of Otitic (and Rhinogenic) Meningitis." Hans Brunner, Chicago.
Guest speaker.

WEDNESDAY AFTERNOON, MAY 3, 1939

JUNIOR CLUB ROOM

2:30—Chairman's address—"Progress in Ophthalmology." Samuel J. Meyer, Chicago.

3:00—"The Upper Respiratory Revenge of the Allergic Child."

I. Harrison Tumpeer, Chicago.

The allergic child is born that way. Allergy disturbs his growth and development. It affects his behavior. It paints his infections with its own peculiar hues.

He rebels. He takes it out on his respiratory structures, his digestive tract, his nervous system, his skin, eyes and even joints. Then he ensnares the unwitting doctor to enter the conspiracy against his "sinus disease", his "narrow nasal passages", his tonsils, adenoids, polyps.

His complaint is allergy; his revenge is surgery.

Discussion opened by Thomas C. Galloway, Evanston.

3:30—"The Eyeground in Hypertensive and Renal Diseases."

Bertha A. Klien, Chicago.

The fundus lesions characteristic of these diseases are discussed, and illustrated with Kodachrom slides, with special consideration of the differential diagnostic points.

Discussion opened by Elias Selinger, Chicago.

4:00—"Plastic and Reconstructive Surgery, Then—"

Joseph C. Beck, Chicago.

"Plastic and Reconstructive Surgery, Now—"

M. Reese Guttman, Chicago.

Dr. Beck will talk about the history and personal experience in Plastic and Reconstructive Surgery up to and including the World War, and

Dr. Guttman's paper will deal with the presentation of recent innovations and advances in the technic of plastic and reconstructive surgery about the face in light of experience gained by the author at the Institute of Plastic Surgery in Prague, Czecho-Slovakia.

THURSDAY MORNING, MAY 4, 1939
BLUE ROOM

Joint Session with Sections on Medicine; Surgery; Public Health and Hygiene; Radiology; Pediatrics; and Obstetrics and Gynecology.

PROBLEMS IN ENDOCRINOLOGY
(For Complete Program and Abstracts of Papers, See Section on Medicine).

SECTION ON PUBLIC HEALTH
AND HYGIENE

F. S. Needham.....Chairman
Loran E. Orr.....Secretary

TUESDAY AFTERNOON, MAY 2, 1939

HOTEL FAUST—PARLOR B

2:30—"Rocky Mountain Spotted Fever in Illinois."

Winston H. Tucker, Evanston.

Since 1934 a rapidly increasing number of cases of Rocky Mountain Spotted Fever of the Eastern type have been recognized throughout downstate Illinois. While on the staff of

the State Department of Health, the author personally investigated most of the cases which occurred from 1934 through 1937. In a large percentage of the cases a definite history of a recent tick bite was obtained. In addition, blood specimens obtained from the patients during convalescence gave a positive Weil-Felix reaction in a high titre. It is apparent that the Spotted Fever virus is wide-spread in ticks throughout this state, inasmuch as cases of the disease have been reported from several widely separated localities. The fox squirrel, cottontail rabbit and woodchuck are the wild rodents which harbor the ticks, while domestic animal hosts include the dog, sheep, goat, horse and cow. The disease will be described in detail and the outstanding symptoms upon which the diagnosis is made will be presented. Judging from the incidence in recent years, there is reason to believe that Rocky Mountain Spotted Fever will be more prevalent throughout the central west in the future.

Discussion opened by Loran E. Orr, Springfield.

3:00—"The Pneumonia Control Program in Illinois."

H. A. Lindberg, Chicago.

Pneumonia causes between 5000 and 6000 deaths in Illinois each year. This death rate greatly exceeds that of any other communicable disease. Experience has shown that the mortality of pneumonia can be reduced by proper medical management from 25% to less than 10%.

Up until the present time, little has been known about the epidemiology and type incidence of pneumonia in the Middle West.

A Pneumonia Control Program was inaugurated in Illinois in November 1938. The purpose and plan of this program is to be discussed. The progress of the first year's experience in epidemiological studies and modern methods of management of pneumonia in the hands of general practitioners will be presented.

Discussion opened by H. J. Shaughnessy, Chicago.

3:30—"Undulant Fever: Its Sources, Modes of Infection and Prophylaxis."

J. F. Shrouts, Woodstock.

A review of the recent literature summarizing the epidemiology of undulant fever discloses considerable disagreement among writers on the relative importance of raw milk as a source of Brucellosis.

Practical control measures for the eradication of the disease are discussed in the light of recent epidemiological and statistical studies with reference to the usual mode of infection as seen in the increasingly larger annual number of cases reported in Illinois.

Discussion opened by W. B. Oliver, Caledonia.

4:00—"Rabies Control in Illinois."

Cecil A. Z. Sharp, Springfield.

In 1933 a new law was passed for the prevention of the spread of rabies. This law gives the authorities, where a case of rabies has occurred, the power to confine dogs or other animals or to restrain or muzzle them as necessary. The enforcement of this act falls to the Department of Agriculture. Statistical tables will be shown giving the number of dog quarantines placed by the Department of Agriculture since the passage of the law. The Department of Public Health previously supplied rabies vaccine to indigents only. Since 1937 it has been available to all exposed citizens.

Statistical tables will be presented showing the number of human rabies deaths, animal heads examined, heads found positive, number of dog quarantines placed and number of Pasteur treatments supplied each year for past five years. The data given will be discussed and methods of improving rabies control in Illinois will be proposed.

Discussion opened by N. O. Gunderson, Rockford.

4:30—"Audiometer Tests on 10,000 Children."

G. Koehler, Springfield.

Tests made with 4B. Audiometer showed 4.6 per cent of children with defective hearing compared with 0.6 per cent found by whispered voice test during preceding five years. Six per cent hearing loss in both ears and nine per cent in one ear,

classified as defective hearing because this compares approximately with minimum defective hearing disclosed by the whispered voice best. Retesting of all children with hearing defects. All cases found referred for further examination and treatment. Efforts made to get reports on all cases referred.

Discussion opened by Robert C. Cook, Springfield.

WEDNESDAY AFTERNOON, MAY 3, 1939 HOTEL FAUST—PARLOR B

2:30—"Measles in 1938—An Analysis of 400 Cases with 28 Instances of Encephalitis."

Archibald L. Hoyne, Chicago.

(Joint paper with Section on Pediatrics)

Factors responsible for periodic outbreaks of measles.

Difficulties encountered in the control of measles from a public health standpoint.

Observations on 400 hospital patients. Unusual frequency of encephalitis as a complication.

When to choose between methods for prevention and modification of measles.

Discussion opened by Gerald M. Cline, Bloomington.

3:00—"Endocrine Disorders from a Public Health Aspect."

James H. Hutton, Chicago.

The first thought is goiter prevention by wholesale administration of iodine.

Many other important aspects:

The Froehlich youngster should be recognized and treated early.

Signs of endocrine disorders should attract attention early.

These features are:

Growth abnormalities

Obesity

Hypoplastic genitalia

Goiter

Maternal and infant welfare programs should pay attention to endocrine disorders.

Studies should be carried out among prisons and hospitals for the insane.

Discussion opened by Orville Barbour, Peoria.

3:30—"Dissemination and Control of Bacillary Dysentery."

Louis H. Block, Chicago.

The problem of bacillary dysentery is often regarded with indifference and skepticism by many physicians despite an increasing prevalence of the disease. This attitude may be attributed, in part, to the comparative uncertainty of bacteriological and serological methods of diagnosis.

Bacillary dysentery is disseminated through ingesta contaminated by individuals harboring the organisms. The mode of dissemination is not well understood, there being probably many factors concurrently responsible for the spread and perpetuation of the disease.

Based on experience gained in two epidemics involving over 1500 patients, control can be achieved by a very careful and comprehensive epidemiological, bacteriological, clinical, and sigmoidoscopic study of the patient, of contacts, and of the environment. Early recognition of the disease, elimination of sources of dissemination, and prompt isolation of all suspects are paramount.

Discussion opened by Lloyd Arnold, Chicago.

4:00—"Tularemia."

P. A. Steele, Decatur.

A review of twenty-five cases in Decatur, Illinois, in the winter of 1938. Case findings; different methods of treatment used by the various physicians in charge of the cases; progress and end results; and a report of special laboratory work done on a few of them. The agglutination test rarely showed a positive

reaction in the first three weeks of the disease, so diagnosis must be made on clinical evidence.

Discussion opened by C. A. Z. Sharp, Springfield.

4:30—"Immunizations."

R. C. Farrier, East St. Louis.

This paper will deal with clinical experience and some research work that has been done on immunizations against Typhoid Fever, Diphtheria, Whooping Cough, Scarlet Fever and Small-pox.

Discussion opened by H. A. Orvis, Winnetka.

THURSDAY MORNING, MAY 4, 1939 BLUE ROOM

Joint Session with Sections on Medicine; Surgery; Eye, Ear, Nose and Throat; Radiology; Pediatrics; and Obstetrics and Gynecology.

PROBLEMS IN ENDOCRINOLOGY

(For Complete Program and Abstracts of Papers, See Section on Medicine).

SECTION ON RADIOLOGY

Harry B. Magee.....Chairman
Warren W. Furey.....Secretary

TUESDAY AFTERNOON, MAY 2, 1939 HOTEL FAUST—PARLOR A

2:30—"Tuberculosis in Children."

E. T. McEnery, Chicago.

A discussion of childhood tuberculosis, emphasizing the importance of contact with positive cases of tuberculosis present in the home, outside the immediate family, such as grandparents, maids, teachers, handy men etc. The necessity of protecting such contacts by careful check-up with these people, with special reference to the x-ray findings, demonstrations and slides.

Discussion opened by E. P. Halley, Decatur.

2:50—"Excretion Urography."

R. A. Arens, Chicago.

Excretion Urography, one of the most recently developed radiologic procedures for examination of the urinary tract, has proven its definite value in skilled hands. The method of procedure must be one of meticulous care, yet is so simplified that, with reasonable precautions, excellent results are obtained.

Excretion urography in relation to various kidney lesions, calculi in the kidney, ureter and bladder, and intrinsic bladder pathology will be discussed, as will the indications and contraindications for this type of examination. Comparison will be made with retrograde pyelography, and considerations given.

The author's procedure will be described in detail. Routine examinations not entirely satisfactory, and time variations between films must be carefully judged by the result of each preceding film. Preparation of the patient is of extreme importance for satisfactory end results. Details of preparation will be considered.

Discussion opened by G. M. Landau, Chicago.

3:10—"Roentgen Consideration of Lesions in and About the Larynx."

Diagnosis—Adolph Hartung, Chicago.

Therapy—T. J. Wachowski, Chicago.

The roentgen examination may disclose pathology or show its exact localization and extent when other methods may not be applicable. The findings revealed by it require close coopera-

tion with the laryngologist for proper interpretation. Technical procedures, are described at length.

The status of surgery vs. radiation is briefly presented. Various methods of radiation therapy are mentioned. The Coutard theory of roentgen therapy is explained, with indications, contra-indications, and reasons for success or failure. Statistics from published large series are given.

Discussion opened by Paul H. Holinger, Chicago.

3:30—"Some Pitfalls in Roentgenologic Diagnosis."

L. M. Hilt, Grand Rapids, Michigan.

We minimize our mistakes and advertise the successes. Reversing this order should prove interesting and educational. Lantern slides will be shown in which operation or autopsy revealed the correct diagnosis. Importance of case history will be stressed. Suggestions requiring slight effort for a more thorough study will be incorporated in the paper."

Discussion opened by David Beilin, Chicago.

3:50—"Median Rhomboid Glossitis."

Joel F. Sammet, Ottawa.

Brocq and Pautrier in 1914 first described seventeen cases of benign mid-line lozenge-shaped or rhomboid lesions of the dorsal surface of the tongue. The literature contains fifty-four cases. This report adds seven. These asymptomatic lesions histologically resemble chronic inflammation, but embryologically may represent anomalous persistence of the tuberculum impar. They are to be differentiated from lingual neoplasia, tuberculosis and syphilis. They require no treatment.

Discussion opened by Cesare Gianturco, Champaign.

4:10—Case Reports.

"Peanut in Bronchus." G. M. Landau, Chicago.

"Diverticulum of the Oesophagus." Perry Goodwin, Peoria.

"Osteopetrosis (marble bones) occurring in a woman 71 years old." Harry A. Olin, Chicago.

WEDNESDAY MORNING, MAY 3, 1939

BLUE ROOM

Joint Session with Sections on Medicine and Surgery.

"Etiology and Differential Diagnosis of Gastric Hemorrhage." M. M. Montgomery, Chicago.

"Treatment of Hemorrhage from the Gastro-Intestinal Tract." Alexander Brunschwig, Chicago.

"Intractable Peptic Ulcer." C. H. Drenckhahn, Urbana.

"Perforations of the Gastro-Intestinal Tract." Gatewood, Chicago.

"The Use of X-ray in Perforation and Hemorrhage of the Gastro-Intestinal Tract." Earl R. Crowder, Evanston.

(For Abstracts of Papers, See Section on Medicine)

THURSDAY MORNING, MAY 4, 1939

BLUE ROOM

Joint Session with Sections on Medicine; Surgery; Eye, Ear, Nose and Throat; Public Health and Hygiene; Pediatrics; and Obstetrics and Gynecology.

PROBLEMS IN ENDOCRINOLOGY

(For Complete Program and Abstracts of Papers, See Section on Medicine).

SECTION ON PEDIATRICS

Gerald ClineChairman

Orville Barbour.....Secretary

TUESDAY AFTERNOON, MAY 2, 1939

HOTEL FAUST

RAINBOW ROOM, MAIN FLOOR

Joint Session with Section on Obstetrics and Gynecology.

2:30-5:00—

"Some Observations on Cerebral Hemorrhage in the New-born."

Heyforth N. Sanford, Chicago.

Cerebral hemorrhage of the new-born is unfortunately most often blamed on manipulative obstetrics. This is not the case, as there are many other factors involved of which manipulative obstetrics is only one of the factors, if any. Inasmuch as it has been found that many conditions of the mother that exist before pregnancy may be a contributing factor, this condition becomes a problem of the general practitioner as well as the obstetrician.

"Late Obstetric Hemorrhages as a Cause of Maternal Mortality in Chicago During 1938."

Charles Newberger, Chicago.

The discussion deals with the maternal deaths due to post-partum hemorrhage, placenta previa, abruptio placenta, rupture of the uterus, and inversion. Data is presented with reference to the type of labor, treatment employed, and fate of the baby. An analysis is made as to the preventability of the fatal outcome.

"The Interdependence of a Public Health Program to the Practice of Obstetrics and Pediatrics."

Elizabeth B. Ball, Springfield.

In order to extend and promote interest in the maternal and child health services in Illinois, the State Department of Public Health through the trained personnel of its Division of Child Hygiene and Public Health Nursing (physicians, public health nurses, nutritionists, etc.,) is cooperating with every agency, professional, public or private, which stands for scientific hygiene and public health.

The State is in the field to guide, to standardize, to supplement and to make authoritative. It is not so much marking out new paths as it is meeting actual exigencies. It is not asking so much who has failed or who should undertake, as it is getting beneath the actual burden. The fine reaction of obstetricians and pediatricians to this program in providing facilities for post-graduate education in maternal care and the care of children, is a definite aid in setting up standards, establishing confidence and stimulating satisfactory response.

"The Care of the New-born."

R. R. Loar, Bloomington.

Role of medication, including oxytocic drugs, analgesics, and operative intervention in production of neo-natal morbidity.

Cooperation of Obstetrician and Pediatrician in care of new-born. Some disadvantages of consultation. Importance of lightening financial burden of newlyweds.

Some observations on asepsis and isolation of new-born.

WEDNESDAY MORNING, MAY 3, 1939

HOTEL FAUST

LEVIN FAUST ROOM

9:00-11:00—

Panel Discussion on "Rheumatic Fever in Childhood."

Leader.....Stanley Gibson, Chicago
 Assistants.....H. Wm. Elghammer, Chicago.
 King G. Woodward, Rockford.
 George L. Drennan, Jacksonville.

THURSDAY MORNING, MAY 4, 1939 HOTEL FAUST—BLUE ROOM

Joint Session with Sections on Medicine; Surgery;
 Eye, Ear, Nose and Throat; Public Health and Hy-
 giene; Radiology; and Obstetrics and Gynecology.

PROBLEMS IN ENDOCRINOLOGY
 (For Complete Program and Abstracts of Papers, See
 Section on Medicine)

RULES GOVERNING PRESENTATION OF PAPERS

"All papers read by members shall be limited to twenty minutes and remarks in discussion to five minutes, floor privilege being allowed only once for the discussion of any one subject.

"All papers read before the Society or any of its Sections shall become the property of the Society. Each paper shall be deposited with the Secretary of the Section when read and the presentation of a paper to the Illinois State Medical Society shall be considered tantamount to the assurance on the part of the writer that such paper has not already appeared and will not appear in medical print before it has been published in the ILLINOIS MEDICAL JOURNAL.

"A paper not heard in its scheduled turn shall be held subject to the call of the Chairman of the Section at the end of the regular session if time permits, or as an alternative at the end of the program.

"All subjects shall be confined strictly to the subject in hand.

"No paper shall appear in the printed transactions of the meeting unless read in full or in abstract."

(From: By-Laws of Illinois State Medical Society).

SECTION ON OBSTETRICS AND GYNECOLOGY

W. T. Carlisle.....Chairman
 W. A. Malcolm.....Secretary

TUESDAY AFTERNOON, MAY 2, 1939 HOTEL FAUST RAINBOW ROOM—MAIN FLOOR

Joint Session with Section on Pediatrics.
 2:30-5:00—

"Some Observations on Cerebral Hemorrhage in the New-Born." Heyworth N. Sanford, Chicago.

"Late Obstetric Hemorrhages as a Cause of Maternal Mortality in Chicago During 1938." Charles Newberger, Chicago.

"The Interdependence of a Public Health Program to the Practice of Obstetrics and Pediatrics." Elizabeth B. Ball, Springfield.

"The Care of the New-born." R. R. Loar, Bloomington.

Discussion—Dr. O. H. Crist, Danville, Ill.
 (For Abstracts of Papers, See Section on Pediatrics).

WEDNESDAY AFTERNOON, MAY 3, 1939 PARLOR A

2:30-5:00—

"Latent Gonorrhea in Obstetrical Patients."

E. D. Plass, Professor of Obstetrics and Gynecology, University of Iowa, Iowa City, Iowa.

Among 500 consecutive apparently normal obstetric patients, organisms satisfying the bacteriologic criteria for gonococci were cultivated from the vaginas or cervixes of twenty—an incidence of 4 percent. Although a history suggestive of gonorrhea within eight years could be obtained from ten of these twenty women, all were without manifestations of active infection at the time the cultures were made and consequently were viewed as "carriers". The puerperal course in these patients was not different from that of a control group.

Discussion opened by W. H. Browne and Joseph L. Baer, Chicago.

"Kraurosis and Leukoplakia of the Vulva." John I. Brewer, Chicago.

Discussion—Dr. Howard S. Holloway.

"Anesthesia and Analgesia in Obstetrics."

Edwin N. Nash, Galesburg.

History of various therapeutic agents. Pharmacology. Methods of administration. Modified Gwathmey method. Inhalation Anesthesia. Pudendal Block. Conclusions.

"A Study of 300 Operations for Uterine Fibroids Performed at a County Hospital."

A. E. Kanter and A. H. Klawans, Chicago.

This is a critical survey of 300 consecutive operations for uterine fibroids performed by the attending and associate staff in gynecology at the Cook County Hospital. Studied are the age, color, parity and size of the tumors together with an analysis of the symptoms. The types of operations, operative morbidity and mortality and lessons to be learned from such a large series are discussed.

Discussion opened by James Carey, Joliet.

"Leucoplakic Vulvitis."

John I. Brewer, Chicago.

Leucoplakic vulvitis, a white or grey white lesion of the vulva, is composed of a hypertrophic stage (leucoplakia, and an atrophic state (kraurosis). The symptoms, which are few and usually insignificant, are out of all proportion to the importance of the lesion. The lesion is associated with carcinoma in 50% of all instances. Hormones seem insignificant etiologically. Diagnosis by inspection may be difficult, in which case biopsy should be made. The many suggested treatments resolve themselves into the one procedure which will most advantageously remove the possibility of carcinoma. This is vulvectomy. If carcinoma is present a vulvectomy and a bilateral resection of inguinal glands must be done.

Discussion opened by Howard S. Holloway.

THURSDAY MORNING, MAY 4, 1939 BLUE ROOM

Joint Session with Sections on Medicine; Surgery;

Eye, Ear, Nose, and Throat; Public Health and Hygienic; Radiology; and Pediatrics.

PROBLEMS IN ENDOCRINOLOGY

(For Complete Program and Abstracts of Papers, See Section on Medicine.)

PROGRAMS OF SPECIAL ORGANIZATIONS

SECRETARIES' CONFERENCE

D. D. Monroe, Chairman.....Alton
A. R. Brandenburg, Vice-Chairman.....Danville
A. R. Bogue, Secretary.....Rochelle

TUESDAY EVENING, MAY 2, 1939

HOTEL FAUST

LEVIN FAUST ROOM

6:00—Dinner Meeting.

"Cooperation of the County Secretaries with the Scientific Committee."

Robert S. Berghoff, Chairman, Scientific Service Committee, Chicago.

The Secretary of the County Medical Society is its key man. As a matter of fact, he frequently is a cross-section of the Society itself. He can and should be a guiding personality. His virile interests and activities can assure his Society's success, and his apathy spell its decadence and ruin.

He and his ninety fellow Secretaries are absolutely essential to the Scientific Service Committee of the Illinois State Medical Society. With his support and cooperation, the Committee's functions are simple, interesting and productive. Illinois has a long established, smoothly functioning Scientific Service Committee, able and ready to service the needs of all ninety County Medical Societies.

In the past few years this committee has expanded and increased its facilities so that today it can be of very material assistance to the County Secretaries in supplying interesting and timely scientific programs and thereby directly increasing both membership and attendance at the County Societies' meetings.

Discussion opened by Charles P. Blair, member Educational Committee, Illinois State Medical Society, Monmouth.

"The Influence of Health Education upon the Practice of Medicine."

W. W. Bauer, Director, Bureau of Health Education, American Medical Association; Associate Editor, *Hygeia*, The Health Magazine, Chicago.

Health Education was among the first considerations of the newly formed American Medical Association in 1847 and has been prominent in the program of the medical profession ever since. All bureaus and councils of the Association function largely through educational processes. The principal bureaus and councils, which communicate directly with the public, are the Bureaus of Health Education, Exhibits, and Investigation, and the Council on Foods. Important communication with the public occurs through the *JOURNAL* of the American Medical Association, *HYGEIA*, The Health Magazine, and the AMANBC radio program *YOUR HEALTH*. Numerous state and local medical societies have health education programs; Illinois is a leader in this field. Health education by the profession takes the form of radio programs, exhibits, press releases, speakers, participation in health councils and committees, and personal

contact with patients. Numerous lay groups and government agencies also function in the field of health education often with liberal cooperation from the medical profession.

Commercial influences in health education are potent; they are of two kinds, constructive and subversive. All these activities influence medical practice because they influence the patient's attitude toward his health, his medical care and his doctor. Health education has had some unfortunate by-effects, but its accomplishments outweigh its disadvantages. It is important that the physician shall play an important part in health education in his private practice, through his membership in organized medicine and through the cooperation of organized medicine with other agencies working toward similar objectives. Small medical societies can function as effectively in health education as large societies, working according to the same principles, but with modified methods. The American Medical Association is prepared to furnish many helps for local use in health education.

"Syphilis Control in Illinois; Its Relation to County Societies."

Herman M. Soloway, Director, Venereal Disease Control Program, State Department of Public Health, Springfield.

EDUCATIONAL MEASURES from the standpoint of the general public, as well as the physician, are fully discussed.

SERVICES RENDERED to physician between the Department of Public Health, are enumerated with detailed explanation.

CASE CONTROL as well as CASE FINDING procedures are also discussed. A complete and detailed explanation of the methods as well as the results of all INVESTIGATIONS (epidemiological) of the source of infections of both gonorrhea and syphilis, including the investigations of subsequent exposures of same is explained herein. Recommendations for cooperative measures between this Department and the relation with the County Medical Society to control venereal diseases in Illinois, is discussed at length.

Discussion opened by I. H. Neece, Councilor, Seventh District, Illinois State Medical Society; and Chairman of the State Society Committee on the Control of Syphilis; Decatur.

CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY

William C. Goenne, President.....Davenport, Iowa
John J. Grant, Vice-President.....Freeport, Ill.
Frank P. Hammond, Secretary-Treasurer.....Chicago, Ill.
Roland A. Jacobson, Program Chairman.....Chicago, Ill.

TUESDAY MORNING, MAY 2, 1939

HOTEL FAUST

LEVIN FAUST ROOM, MAIN FLOOR

President Wm. C. Goenne, Presiding

9:00—"Regional Anesthesia in Traumatic Surgery."
Emery B. Neff, Moline.

This paper discusses some of the advantages of regional anesthesia in traumatic surgery especially in ambulatory patients, analyzes some of the causes of failure and other objections that have arisen in the course of its use, discusses the use of the method in fractures and is, in general, a plea for accurate technical knowledge of regional anesthesia.

Discussion opened by James J. Valentine, Chicago.

9:40—"Further Studies on the Application of Bone Plates."

Will F. Lyon, Chicago.

There has been considerable revival of interest in the use of bone plates during the last few years with the result that many different types of bone plates and screws have appeared on the market. The American Association of Orthopedists appointed a committee to investigate the question of plates and if possible select one that was non-breakable and non-bendable. This paper will discuss the different types of plates as well as the holding power of the various types of screws available.

Discussion opened by James J. Callahan, Chicago.

10:20—"Functional Reflections of Organic Disease as Seen in Industry."

Leroy H. Sloan, Chicago.

Many patients present symptoms which appear to be organic, but which are largely functional in type. Malingering and hysterical manifestations are fairly common following industrial accidents. The reverse, however, is also true, that not infrequently patients are regarded as having functional and hysterical attacks which are actually due to organic disturbances. These supposed functional manifestations lie in the border line field of medicine and neurology.

A brief resume of several cases which illustrate the organic nature of supposed functional disturbances will be given, as well as a very brief review of those conditions which may frequently confuse the examiner.

Discussion opened by Roland P. MacKay, Chicago.

11:00—"Practical Tests of Functional Capacity in Silicotics."

Elston L. Belknap, Milwaukee, Wisconsin.

Clinical finding of frequent absence of disability in nodular silicosis uncomplicated by active tuberculosis can be substantiated by research techniques as yet too complex for general use. However, every physician should include in his examination of such cases, a minimum of specific observations including chest expansion, breath-holding ability, and exercise test, and in doubtful cases, the relatively simple methods of vital capacity and diaphragmatic excursions observed by fluoroscopy.

With these objective criteria, the author forms a balanced working judgment of actual lack of work disability in one hundred nodular silicotics analyzed in light of experience with several hundred non-silicotics.

Discussion opened by James A. Britton, Chicago.

11:40—"Trauma in the Etiology of Peptic Ulcer."

Chester C. Guy, Chicago.

This paper will review briefly opinions expressed in domestic and foreign medical literature, and explain difficulties in deciding this question in general. It will summarize present opinion and give certain postulates which must be met before an ulcer can be considered as of traumatic origin. A few brief case histories will illustrate these points. A summary will be given of several recent court decisions in cases of medico-legal significance.

Discussion opened by George L. Apfelbach, Chicago.

TUESDAY AFTERNOON, MAY 2, 1939

HOTEL FAUST

LEVIN FAUST ROOM, MAIN FLOOR

Joint Session with Section on Surgery.

A SYMPOSIUM ON FRACTURES

2:30—

"Treatment of Compound Fractures." Carlo S. Scuderi, Chicago.

Discussion opened by Ellsworth Black, Jacksonville.

"Fractures of the Elbow." Rudolph J. Mroz, Rockford.

Discussion opened by Edwin M. Miller, Chicago.

"Pin Fixation of Fractures of the Neck of the Femur." Willis J. Potts, Oak Park.

Discussion opened by James Stack, Chicago.

"Operative Treatment of Fractures." Paul B. Magnuson, Chicago.

(For Abstracts of Papers, See Section on Surgery.)

PHYSICIANS' ASSOCIATION
DEPARTMENT OF PUBLIC WELFARE, STATE OF ILLINOIS

D. Louis Steinberg.....President
M. R. Nesbitt.....Vice-President
J. W. Klapman.....Secretary

TUESDAY MORNING, MAY 2, 1939

PARLOR B—MEZZANINE FLOOR

HOTEL FAUST

9:00-1200—

"The Therapy of Post-Encephalitis, Especially the Oculo-Gyric Crisis."

Harry I. Weiner, Dixon.

The theories of the mechanism and of the underlying pathology of the ocular spasms of epidemic post-encephalitis will be discussed.

Twenty-four patients have been observed for a short period, with no treatment, benzedrine sulphate, atrophine sulphate, hyoscine hydrobromide, tincture of stramonium, singly and in combinations with benzedrine sulphate. The effect of the various drugs on post-encephalitic patients, especially with regard to the oculo-gyric crises, also the efficacy of these drugs on the improvement of the rigidity and the tremors, and their effect on patients suffering with narcolepsy and myasthenia will be presented.

Discussion opened by Isidore Finkelman, Chicago.

"Psychosis Due to Exogenous Toxins—Marihuana."

Marjorie Nesbitt, Chicago.

Recently, marihuana smoking in the United States has attracted the attention of psychiatrists, judges, prosecutors and educators.

The patients of the Chicago State Hospital who have used marihuana, give a history of psychosis previous to the use of this drug, and also show evidences of psychosis on admission.

The exact action of marihuana is unknown at the present time, but as far as can be told, there is no predisposition to either a dementia praecox make-up, manic or any other pathological make-up before the patient indulges in marihuana.

There is a psychological dependence but no physiological dependence.

Discussion opened by F. J. Gerty, Chicago.

A. A. Low, Chicago.

Bernard Fantus, Chicago.

"Psychoses with Pernicious Anemia."

George A. Wiltrakis, Elgin. Anthony V. Partipilo, Chicago.

Mental symptoms, although known for many years, are frequently overlooked in consideration of the descriptions of the symptoms complex of pernicious anemia. According to the literature, psychoses occur in four to seven percent of the cases and lesser mental changes in 35% of the cases.

The authors have observed at the Elgin State Hospital, dur-

ing the past eight years, a total of twenty-four patients with psychoses with pernicious anemia. These cases are summarized and discussed and a few are presented in detail. The prognosis in this group is unfavorable as in pernicious anemia patients with severe neurological changes.

Discussion opened by Arthur Weil, Chicago.

SYMPOSIUM ON MENTAL DISORDERS FOLLOWING HEAD TRAUMA

1. "Traumatic Psychoses."

H. H. Goldstein, Chicago.

This as a study of 34 patients diagnosed as traumatic psychoses at the Chicago State Hospital. This survey was made in attempt to evaluate the etiologic and diagnostic factors of importance, especially age, sex, occupation, also alcoholism.

The period of unconsciousness seemed to be directly associated with the tendency to development of a psychoses and it was unusual for a patient to develop psychotic symptoms which could be attributed to injury when a reasonable length of time intervened between injury and development of psychotic behavior.

Discussion opened by physician to be announced at meeting.

2. "Psychotic Reaction Following Trauma."

D. Louis Steinberg, Elgin.

This paper is a study of state hospital patients whose psychotic reactions are related to head injuries. The group includes all the post-traumatic reaction types except schizophrenia and psychoneurosis.

The pre-traumatic personality type is studied in relationship to the post-traumatic reaction. The clinical, neurological, affective and intellectual changes immediately following the injury and the progressive changes in this picture during their institutionalization are discussed.

The incidence of trauma in initiating active psychotic symptomatology is an already existing, but apparently quiescent organic brain disease, such as: General paralysis and cerebral arteriosclerosis is evaluated.

Discussion opened by physician to be announced at meeting.

3. "Schizophrenic-like Psychoses Following Head Injuries."

Louis B. Shapiro, Elgin.

A survey of 2,000 cases of schizophrenics in the Elgin State Hospital revealed 21 cases in whom overt psychotic behavior followed severe head injury. An analysis of the pre-psychotic personality, heredity, and symptomatology, as well as neurologic and encephalographic findings, showed that these cases can be divided into two groups:

(1) Those in whom the trauma seemed to act as a releasing factor.

(2) Those in which the trauma produced pathological changes in the brain, which contributed to the formation of the clinical picture, which closely resembles the schizophrenic mechanism.

Discussion opened by physician to be announced at meeting.

"Psychoses in Children."

Eugene I. Falstein, Chicago.

The incidence of psychotic reaction in children as seen in the Institute of Juvenile Research is discussed, also the problem which arises, that of singling out potential schizophrenics while they are still pre-pubescent. It is very difficult in these children, particularly those in whom the psychosis developed within the first few years of life, to rule out any contributing organic factors.

The importance of each of the various psychoses is revealed and a comparison made with similar adulthood problems.

Discussion opened by Maxwell Gitelson, Chicago.

12:00—Luncheon for all members of Physicians' Association, their wives and guests. Faust Hotel.

PRESIDENT'S DINNER

The annual President's Dinner will be held on Wednesday evening, May 3, 1939, in the Blue Room of the Hotel Faust. No other meeting will be held on this evening. Honoring the President of the Illinois State Medical Society, Dr. Samuel E. Munson, Springfield, and with all Past-Presidents of the Society as guests, this should be a gala occasion indeed. Suitable entertainment will be supplied during the dinner service, and the famous "Singing Doctors" of Rockford will be heard once more.

There will be no speeches during the dinner with the exception of the presentation of the President's Certificate by the Chairman of the Council, Dr. E. P. Coleman of Canton. Following the dinner, dancing and cards will be enjoyed to suit the desires of the guests.

It is planned to have Dr. Rock Sleyster, President-Elect of the American Medical Association, of Wauwatosa, Wisconsin, as a special guest at dinner.

Every member and guest present at the annual meeting should arrange to be present at the President's Dinner.

VETERANS' SERVICE COMMITTEE DINNER

1. Presentation of Colors. Commander, Rockford American Legion Post.

2. Bugle: To the Colors.

3. "Expansion of the Medical Idea in Veteran Organizations." Dr. Overton Brooks, Commander Medical Post. Lt. Commander M. C. Naval Reserve.

4. "Remarks." Edward Clamage, Commander, Department Illinois American Legion.

5. "Remarks." Col. Robert C. Bourland.

6. Moment of Silence.

7. Retirement of Colors.

ALUMNI LUNCHEONS

Several midwestern medical schools will have their luncheons in the Hotel Faust Wednesday noon, May 3, 1939. Tickets for all luncheons will be available at the registration and information desk and should be procured early so the hotel will be able to make definite plans to accommodate all alumni desiring to attend the luncheons.

The University of Illinois Medical School Alumni will have their luncheon in the Rainbow Room. Northwestern University Medical School will use the Levin Fause Room; The University of Chicago will have the Junior Club Room, and special rooms will be announced for the luncheons of Loyola University, Chicago; and Washington University, St. Louis. These will be properly scheduled and all information concerning same will appear on bulletin boards and in the official program to be distributed at the meeting.

SCIENTIFIC EXHIBITS

FAUST HOTEL GARAGE

J. S. Templeton, Chairman.....Pinckneyville
Nathan Smith Davis, III, Secretary.....Chicago

Booth 1. "The Pathology of Splenic Disease. A Demonstration of Various Types of Splenomegaly."

J. D. Kirshbaum, Cook County Hospital, Chicago.

Demonstration to show various types of splenomegaly. Specimens will be mounted to illustrate cases of leukemia, Hodgkin's disease, tuberculosis, tularemia, malaria, sepsis lenta and other infectious diseases. Microphotographs will illustrate certain lesions and tables and charts will show incidence and frequency of splenomegaly in a series of 10,000 consecutive necropsies.

Booth 2. "The Biology, Chemistry and Physics of Oxygen Therapy."

David J. Cohn, Michael Reese Hospital, Chicago.

The exhibit consists of charts and mechanical demonstrations to illustrate the fundamental principles underlying the therapeutic administration of oxygen.

(A) Models illustrate the mechanical pressure system of the breathing process. Diagrams show the partial pressure relationships between the gases in the atmosphere, the alveoli, the blood, and the tissues, in health and in disease, as well as the chemistry of the hemoglobin-oxygen-carbon dioxide cycle.

(B) Further models illustrate the basic physical and engineering principles, knowledge of which is necessary for the scientific construction of oxygen therapy apparatus. These include the laws of heat transfer, hygrometry, and the diffusion of gases in the atmosphere and through materials.

(C) The method of gas analysis in the air and in the blood and tissues are outlined and demonstrated.

Booths 3, 4, 5, 18, 19, 20. "Modern Management—Pneumonia Control. (2) Tularemia."

A. C. Baxter, Assistant and Acting Director, Department of Public Health, Springfield.

Doctors Robertson, Baxter, and Lindberg, Medical Colleges of the University of Chicago, Northwestern University and the Illinois State Department of Public Health.

Exhibit on pneumonia consists of units on diagnosis, treatment with serum, oxygen and other modern methods, epidemiology, prophylaxis and a demonstration in typing.

Tularemia exhibit shows life cycle of disease, mode of spreading and lesions in man.

Booth 6. "Summary of Diagnosis and Treatment of Gastro-intestinal Tuberculosis."

K. J. Henrichsen, Municipal Tuberculosis Sanatorium, Chicago.

The exhibit will consist of three cabinets illuminated to show x-ray and natural color specimens and a number of pathological specimens of intestinal tuberculosis, together with a number of graphic charts summarizing the diagnosis and treatment of about 600 cases of gastro-intestinal tuberculosis.

Booth 7. "Fractures of the Facial Bones."

Casper M. Epstein, M.D., D.D.S., Chicago.

The exhibit consists of a graphic illustration with twenty-five skulls and approximately twenty-five to fifty x-ray films depicting the various types of fractures of the facial bones and the methods of treatment. Various appliances will be shown and the method of application.

Booth 8. "Skull Fractures and Cerebral Injuries."

Harry E. Mock and John L. Lindquist, St. Luke's Hospital; Department of Surgery, Northwestern University School of Medicine, Chicago.

Consists of charts, plaster models, paintings and drawings and x-rays. This exhibit will depict the management of skull fractures and cerebral injuries and is based upon a review of 300 proved skull fractures treated by the exhibitors as well as a study of the records of 3,000 proved skull fractures collected by Mock.

The x-rays will demonstrate simple methods and necessary views to be taken to demonstrate the presence of a skull fracture. The paintings and drawings will demonstrate cerebral pathology following injury. Diagnosis of conditions causing prolonged unconsciousness will be stressed.

Booth 9. "Cranio-cerebral Injuries; Neurological and Neuropathological."

Harold C. Voris, J. Kearns, A. Verbrugghen, Office of Frank J. Walsh, Coroner of Cook County, Illinois; The Cook County Hospital; University of Illinois Medical School; Loyola University Medical School; Rush Medical College of the University of Chicago, Chicago.

This exhibit consists of a number of necropsy specimens of brains of patients dying from various types of cranio-cerebral injuries. These specimens illustrate various types of pathology of brain injury. There are a number of charts and diagrams illustrating statistics of the neurosurgical service at the Cook County Hospital, clinical classification of cases of head injury, and clinical management of various types of cases of head injury, including those in which surgical treatment is indicated.

Booth 10. "Carcinoma of Mouth and Larynx."

Frank E. Simpson, Frank E. Simpson Radium Institute, Chicago.

The exhibit is divided into two parts. (1) Carcinoma of the Mouth; (2) Cancer of the Larynx.

(1) Carcinoma of the Mouth. (a) Motion picture in color of radon technic with cases. (h) Equipment needed for treatment. (c) Transparencies of cases—before and after treatment.

(2) Cancer of the Larynx. (a) A new treatment for the intra-laryngeal application of radon. (h) Motion picture in color of technic.

Booth 11. "Surgical Treatment of Intrathoracic Tumors."

W. E. Adams, University of Chicago, Chicago.

The exhibit consists of both clinical and experimental material; a portion is original work. Tumors involving the lungs, esophagus, mediastinum and chest wall are included. Operative procedures and clinical course as well as the pathological material, are represented.

Booth 12. "The Treatment of Pulmonary Tuberculosis."

Jerome R. Head, The Edward Sanatorium, Naperville.

Diagram of Edward Sanatorium.

Photographs of interior accommodations.

Moving pictures illustrating different forms of treatment of pulmonary tuberculosis.

Booths 13, 14, 26. "The Premature Infant."

H. G. Poncher, State Department of Public Health, Chicago.

1. Educational exhibit on Obstetric and Pediatric factors concerned with etiology, prevention, management and treatment.

2. Demonstration of the above by State, County, City and Private Agencies.

3. Motion picture on Management and Care of Premature Infants.

Booth 15. "Some Aspects of Electrocoagulation. Color Motion Pictures of Body Cavities by Special Light Projection."

Joseph Francis Jaros, Chicago.

The film was seen by Dr. J. Gordon Wilson, Dr. Leslie B. Arey, Northwestern University Medical School; Dr. George Rukstinat, University of Chicago; D. Frank J. Novak, University of Illinois Medical School, and Dr. Arthur H. Curtis in May, 1937.

Through special light projection, first tried in 1931, motion pictures are shown of electrocoagulation of the pharynx, rectum and cervix; (tonsils, hemorrhoids, cervix) many made by the operator without assistance during operation.

Booth 17. "Surgical Pathology of the Colon and Rectum and its Relation to Operative Procedures."

R. B. Malcolm, L. Rossiter, E. Palmer, and W. H. Cole; Department of Surgery, University of Illinois College of Medicine, Chicago.

Individual case histories, six or seven in number, are chosen to illustrate carcinoma of the colon and rectum in the various segments of the bowel. Colored drawings, photomicrographs, x-rays, etc., will be used to illustrate the various features of surgical pathology, particularly as they are related to treatment.

Booth 21. "Low Back and Sciatic Pain."

Samuel J. Lang and Earl R. Crowder, Evanston Hospital and Northwestern University, Evanston.

A series of x-ray films demonstrating certain lesions which are associated with low-back and sciatic pain.

Booth 22. "Tumors of Urinary Bladder."

B. C. Corbus, Jr., Department of Pathology, University of Illinois, College of Medicine, Chicago.

Colored photomicrographs.

Booth 23. "Cancer of the Larynx."

Max Cutler and Henri Coutard, Chicago Tumor Institute, Chicago.

The exhibit will consist of:

Charts, models and photographs, gross specimens, photomicrographs, and soft tissue x-ray films, demonstrating:

- (a) Anatomy of the larynx.
- (b) Clinical types and anatomical locations of laryngeal carcinoma.
- (c) Clinical examination and methods of diagnosis of laryngeal carcinoma.
- (d) Histopathology.
- (e) Treatment.
- (f) Results.

Booth 24. "Histologic Changes in Tumors Implanted with Radon Seeds."

Perry J. Melnick, University of Illinois College of Medicine, Chicago.

The exhibit consists of microphotographs showing irradiation changes, followed day by day, in transplantable rat tumors implanted with gold radon seeds. Under these conditions the dose distance, and time factor can be accurately measured, and thereby accurately correlated with the changes observed.

Booth 25. "Plastic and Reconstruction Surgery."

Hilger Perry Jenkins, Department of Surgery, University of Chicago, Chicago.

Photographs of a number of interesting plastic and recon-

struction surgery cases with particular attention to the pedicle skin graft. The photographs are printed on "TRANSLITE" and then tinted to give natural color effects, which are demonstrated in illuminated viewing boxes.

FAUST HOTEL—MEZZANINE FLOOR

Booth 27. "Mesenteric Lymph Adenitis."

C. A. Bennett, Coleman Clinic, Canton.

Large 40 inch by 4 feet pictures of Mesenteric Lymph Glands. Color picture projection of Mesenteric Lymph Adenitis.

Literature to distribute of articles having been published in medical journals.

Booth 28. "Value of Abdominal Scoutfilm."

Theodor Lang, St. Anthony's Hospital, Rockford.

It is intended to present x-ray films of about six different sets in which a flat plate of the abdomen permitted the establishment of the diagnosis.

Booth 29. "The Doctor as Mental Hygienist."

Conrad S. Sommer, Illinois Society for Mental Hygiene, Chicago.

An exhibit of wall posters consisting of text and photographs illustrating methods whereby the physician in general practice or in non-psychiatric specialties, can play an important preventive role safeguarding his patients against unnecessary fears, misunderstandings, conflicts, etc., detrimental to good mental health. Literature to be distributed will accompany the exhibit.

Booth 30. "The Anatomy of the Nasal Accessory Sinuses."

O. E. Van Alyea, University of Illinois College of Medicine, Chicago.

Specimens from cadaver will be shown illustrating the anatomy of the sinuses and their intranasal connections.

Booth 31. "Some Effects of Commonly Used Nasal Medications on the Lungs."

Theo. E. Walsh, Paul R. Cannon, University of Chicago, Chicago.

The increasing incidence of Lipoid Pneumonia in Humans, in adults as well as in children, has shown the ease with which nasal medicaments may reach the lungs. The importance of knowing what effects such medicaments may have on normal lungs is obvious. The exhibit consists of transparencies of photomicrographs of lungs of animals treated intranasally with various commonly used nasal medications together with some photomicrographs of human material. In addition specimens of lungs of animals similarly treated have been cleared by the Spalteholz method and are shown in appropriate jars. The medications have been considered under the headings of "oils," "Antiseptics," and "Astringents."

Booth 32. "Suppuration in the Petrous Pyramid. X-Ray Demonstration. Pneumatisation of the Pyramid. Histo-Pathology of Suppuration."

J. R. Lindsay, University of Chicago, Chicago.

The development of pneumatized areas around the labyrinth and in the apex of the temporal bone follows certain definite patterns. Exact knowledge of these patterns of pneumatization is essential for accurate diagnosis in acute and chronic suppuration, and for a systematic and efficient method of surgical approach. Each type of pattern of pneumatization will be demonstrated by selected temporal bone sections, photographs of gross specimens, and diagrams for orientation. Roentgenograms will be shown illustrating both normal pneumatization and the appearance when suppuration is present in each of these areas both acute and chronic.

Serial sections from fatal cases of petrositis will be shown which illustrate the pathology of suppuration in each of the pneumatised areas demonstrated anatomically. The anatomical demonstration is based on serial sections of 150 temporal bones. The pathological demonstration is selected from about 20 fatal cases of otitic complication. The roentgenograms are from a comprehensive group of clinical cases.

The exhibit will consist of translights, both in color, and black and white, varying in size from 2x7 to 8x10, mounted in view boxes. A small number of gross specimens will be included.

Booth 33. "Uretero-Intestinal Anastomosis, or Anastomosis of the Ureter with the Colon."

Roy E. Brackin, Department of Surgery, Rush Medical College, University of Chicago, Chicago.

This is a new method of uretero-intestinal anastomosis in which peritoneum is utilized. Technic will be shown by drawings. The result in animals will be shown by intravenous pyelograms, mounted gross specimens, x-rays of injected specimens, photographs of specimens, photomicrographs of the uretero-intestinal openings, ureters, bladder and kidneys of animals up to one year following uretero-intestinal anastomosis by this method which is original with us.

MAIN LOBBY

Booth 34. "Exhibit of the Interprofessional Relations Committee of the N.A.R.D. and the I.Ph.A. Exhibit of the U. S. P. and N. F. propaganda for the medical profession."

Mr. Joseph M. Shine, National Association of Retail Druggists, and Illinois Pharmaceutical Association, Chicago.

Booth 35. "Treatment of Pulmonary Tuberculosis. Hygienic-Dietetic and Thoracic Surgical Methods."

D. O. N. Lindberg, Macon County Tuberculosis Sanatorium, Decatur.

Modern treatment of pulmonary tuberculosis continues properly to stress the rest factor constitutional and local. A group of chest roentgenograms illustrative of outstanding important retrogressive changes with respect to tuberculous pulmonary improvements will be shown for both constitutional and local rest factors of treatment. The results that may be expected to be derived from the various surgical splinting measures as well as non-surgical (Hygienic-dietetic) procedures will readily be noted on serial film comparisons.

TECHNICAL EXHIBITORS AT THE 1939 ANNUAL MEETING

A. S. Aloe Company, Saint Louis, Mo.
The Arlington Chemical Company, Yonkers, N. Y.
The Borden Company, New York, N. Y.
Chappel Bros., Inc., Rockford, Ill.
Ciba Pharmaceutical Products, Inc., Summit, N. J.
The DeVilbiss Company, Toledo, Ohio.
Doctors' Credit Service, Peoria, Ill.
Eli Lilly and Company, Indianapolis, Ind.
C. B. Fleet Company, Inc., Lynchburg, Va.
H. G. Fischer & Company, Chicago, Ill.
General Electric X-Ray Corporation, Chicago, Ill.
Gerber Products Company, Fremont, Mich.
Hynson, Westcott & Dunning, Inc., Baltimore, Md.
Horlick's Malted Milk Corporation, Racine, Wis.
Jetter & Scheerer Products, Inc., New York, N. Y.

Jones Metabolism Equipment Company, Chicago, Ill.
Lederle Laboratories, Inc., New York, N. Y.
J. B. Lippincott Company, Philadelphia, Pa.
A. E. Mallard, Detroit, Mich.
Mead Johnson & Company, Evansville, Ind.
Medical Protective Company, Wheaton, Ill.
Mellin's Food Company, Boston, Mass.
The Mennen Company, Newark, N. J.
M. & R. Dietetic Laboratories, Inc., Columbus, Ohio.
V. Mueller & Company, Chicago, Ill.
Pet Milk Sales Corporation, Saint Louis, Mo.
Petrolagar Laboratories, Inc., Chicago, Ill.
Philip Morris & Co. Ltd., Inc., New York, N. Y.
W. B. Saunders Company, Philadelphia, Pa.
S. M. A. Corporation, Chicago, Ill.
Smith, Kline & French Laboratories, Philadelphia, Pa.
E. R. Squibb & Sons, New York, N. Y.
Standard X-Ray Company, Chicago, Ill.
White Laboratories, Inc., Newark, N. J.
John Wyeth & Brother, Inc., Philadelphia, Pa.
Zuck and Eaton, Rockford, Ill.

A. S. ALOE COMPANY—Booth 14

"A. S. Aloe Company of St. Louis, the world's largest surgical supply house," this year is showing several pieces of their STEELINE Treatment Room Equipment, which features the rugged durability of heavy gauge construction combined with the modern, plastic beauty of fine wood furniture. In addition to their complete line of Boston bags, medicine cases, and special instruments will be shown. Particularly featured is a full line of American made STAINLESS STEEL Instruments. The Aloe Company will be represented by Val H. Drennan, their western Illinois representative.

THE ARLINGTON CHEMICAL CO.—Booth 6

Again the Arlington Chemical Company will exhibit their products and the Illinois State Medical Society Convention, featuring their Biological and Pharmaceutical Products. They are offering a \$9.75 diagnostic protein outfit consisting of eighty of the most common causative factors in allelic conditions. Also a full line of Food, Epidermal, and Fungi proteins and Pollen extracts for diagnosis and desensitization. Dr. J. H. Frazer, who will be in charge of the exhibit, will be glad to discuss any allergic problem.

THE BORDEN COMPANY—Booth 12

New, yet already remarkably successful in infant feeding, BIOLAC is exhibited for the first time in Illinois at the Borden Booth. Competent representatives will gladly provide specific, helpful information on the unique virtues of this liquid, modified milk.

Also exhibited are other Borden products, notably DRYCO, KLIM, BETA LACTOSE, Merrell-Soule Products and Borden's Irradiated Evaporated Milks.



CHAPPEL BROTHERS, INC.—Booth 7

Chappel Laboratories feature their contribution to "Endocrine Therapy in General Practice," Prephysin-Chappel. Prephysine-Chappel is a true anterior pituitary gonadotropic preparation, derived from the anterior lobe of the pituitary gland.

Also featured will be Chappel E. M. F., which is a highly concentrated Erythrocyte Maturing Factor of liver and 500 International Units of crystalline Vitamin B₁ per cc.

Potent, highly refined, clinically tested, Chappel Pharmaceuticals have set a new high standard for pernicious and secondary anemia preparations.

CIBA PHARMACEUTICAL PRODUCTS, INC.—Booth 5

Among the products CIBA Pharmaceutical Products, Inc., will exhibit at their booth are Perandren "Ciba" (Testosterone Propionate) synthetically prepared chemically pure male hormone. Trasentin "Ciba," a synthetically and chemically pure non-narcotic antispasmodic, having the advantageous pharmacologic properties of both Papaverine and Atropine without their undesirable side effects. Esidrone "Ciba" a potent mercurial diuretic in which the mercury is chemically combined with Theophylline. Representatives of CIBA Pharmaceutical Products, Inc., will be at the booth and will be very happy to welcome their physician friends.

THE DE VILBISS COMPANY—Booth 26

The complete DeVilbiss line of atomizers, steam vaporizers and nebulizers will be on display. Especially featured in the exhibit are illustrations graphically showing the superior coverage afforded by the atomizer in the application of solutions to the nose and throat. These illustrations are based on X-Ray research.

Copies of the illustrations for reference may be secured from Mr. E. J. Corfeld, DeVilbiss representative in charge of the display.

DOCTORS' CREDIT SERVICE—Booth F

The Doctors' Credit Service provides a systematized collection of your accounts. The service has been tried and tested, and as much as \$2,000 has been collected with one unit of this system. The service is a personalized one, which lends dignity, prestige and personal appeal to your reminder of service rendered.

We guarantee you maximum results at the lowest cost to you. Approved and accepted by Medical Societies.

ELI LILLY AND COMPANY—Booth 25

We plan to feature the following Council-accepted products: Liver Extracts, Lilly "Amytal" (Iso-amyl Ethyl Barbituric Acid, Lilly), "Merthiolate" (Sodium Ethyl Mercuri Thiosalicylate, Lilly), Iletin (Insulin, Lilly), and ephedrine products.

C. B. FLEET COMPANY, INC.—Booth 15

Phospho-Soda (Fleet) is a highly concentrated and purified, aqueous solution of sodium phosphates. It is non-toxic, rapid but mild in action without irritation of the gastric or intestinal mucosa. Indicated for hepatic dysfunction, and for its thorough eliminating and cleansing action on the upper and lower gut.

H. G. FISCHER & COMPANY—Booth 24

The latest Fischer Model of Short Wave, X-Ray and other apparatus, to be exhibited and demonstrated will interest physicians because of the many unique features of design and performance. The complete FISCHER line includes Shockproof X-Ray apparatus, short wave units, combination cabinets, galvanic generators, ultra violet and infra-red lamps; tissue-cutting and other units, accessories and supplies. Physicians attending the convention are invited to ask for demonstrations of models in which they are interested or to consult with FISCHER representative regarding technics made available by FISCHER apparatus.

GENERAL ELECTRIC X-RAY CORPORATION—Booths 1 and 2

Featured in the exhibit of the General Electric X-Ray Corporation will be the world-famous Inductotherm; the Model F-3 Shockproof Portable X-Ray Unit, ideal for the general practitioner; a new and vastly different electrosurgical unit that will interest every surgeon; and, the Model "A" Microsurgical Unit widely employed for electrocoagulatory procedures. In addition many advantageous accessories will be shown and an interesting group of radiographs.

GERBER PRODUCTS COMPANY—Booth 21

The new Gerber Cereal Food, Dry Pre-Cooked, will be shown at the Gerber booth. Samples and professional literature about this Cereal product, as well as the other Gerber Baby Foods, are available.

HORLICK'S MALTED MILK CORPORATION—Booth 18

A treat for the well, a boon for the sick and convalescent! Horlick's the Original Malted Milk combines the unique advantages of a refreshing beverage with those of a nutritious food of remarkable digestibility. You will enjoy a call at the Horlick Booth where samples of Horlick's Malted Milk Tablets, the delicious food confection, will be distributed.

HYNSON, WESTCOTT & DUNNING, INC.—Booth "E"

Hynson, Westcott & Dunning, Inc., will have an exhibit featuring Mercurochrome and various pharmaceutical specialties of their manufacture. There will also be a display of some of the diagnostic apparatus and ampule solutions which have been developed in cooperation with physicians. As usual, competent representatives of the company will be in attendance to demonstrate the products and to answer questions. Literature and samples will be available to physicians who are not already familiar with products exhibited or who wish to obtain a trial supply.

JETTER & SCHEERER PRODUCTS, INC.—Booth B

Jetter Scheerer Products, Inc., will exhibit a very extensive line of Rustless Steel and chrome plated instruments, including specialties such as our Von Petz and Neuffer-Ulrich Stomach and Intestinal Suturing Apparatus.

JONES METABOLISM EQUIPMENT COMPANY—Booth 20

The Jones Metabolism Equipment Company in Booth 20 will feature as their display the Jones Motor Basal metabolism apparatus.

A special feature of this unit is that it contains no water and requires no calculation in determination of the basal metabolic rate.

LEDERLE LABORATORIES, INC.—Booth 11

Lederle Laboratories, Incorporated, will again display and feature Antipneumococcic Serum for specific pneumonia therapy, both horse and rabbit serum, and Antipneumococcic Sera for diagnosis and typing; Globulin Modified Antitoxin, especially featuring the use of Scarlet Fever Antitoxin for prophylaxis and therapy will be exhibited.

New advances in the Allergy line as well as Liver Extracts, Vitamin B. Complex, and other specialties will be exhibited.

Competent, well-informed representatives will be on hand to welcome physicians and to furnish information on the use of different products.

J. B. LIPPINCOTT COMPANY—Booth 23

J. B. Lippincott Company will exhibit Thorek: "Modern Surgical Technic"; Rigler: "Outline of Roentgen Diagnosis"; Bacon: "Ames, Rectum, Sigmoid Colon"; Wilson: "Management of Fractures and Dislocations"; Maxon: "Spinal Anesthesia"; Spicer: "Trauma and Internal Disease" and their full line of medical and surgical publications.

A. E. MALLARD—Booth "I"

A. E. Mallard, manufacturing chemist, of Detroit, Michigan, will have a display of modern pharmaceutical products which are in keeping with the present trend of medical therapy. These products are manufactured under strict laboratory control. They are guaranteed to be true to label and of reliable potency, and

are the result of knowledge gained in 28 years experience in pharmaceutical research and manufacturing.

MEAD JOHNSON & COMPANY—Booth 3

Three new Mead products are on display at Mead Johnson & Company's booth: Mead's Thiamin Chloride Tablets; Mead's Cevitamic Acid Tablets; Mead's Nicotinic Acid Tablets. Olac for feeding prematures is also shown, as well as the complete line of Mead's infant diet materials.

THE MEDICAL PROTECTIVE COMPANY—Booth 27

The most exacting requirements of adequate liability protection are those of the professional liability field. The Medical Protective Company, specialists in providing protection for professional men, invites you to confer, at their exhibit, with the representative there. He is thoroughly trained in Professional Liability underwriting.

MELLIN'S FOOD COMPANY—Booth 28

Opportunity will be offered for a discussion of the application of Mellin's Food in the feeding of infants whose individual condition sets them apart from so-called normal babies, and whose diet needs to be adjusted in a manner calculated to correct their digestive disturbance. Mellin's food is worthy of attention for it has occupied an outstanding position in the field of pediatrics ever since the beginning of the study of the art or science of infant feeding.

THE MENNEN COMPANY—Booth 4

The Mennen Company will exhibit their two baby products—Antiseptic Oil and Antiseptic Borated Powder. The Antiseptic Oil is now being used routinely by more than 90% of the hospitals that are important in maternity work. Be sure to register at the Mennen exhibit and receive your kit containing demonstration sizes of their shaving and after-shave products; also, for the lucky number prize drawing to be held at the close of the Convention for DeLuxe Fitted Leather Toilet Kits.

M & R DIETETIC LABORATORIES, INC.—Booth 16

M & R Dietetic Laboratories, Inc., Columbus, Ohio, will display Similac and powdered SofKurd. Representatives will be glad to discuss the merits and suggested application of these products.

V. MUELLER & COMPANY—Booth 29

V. Mueller & Company extends a cordial invitation to members and guests to visit their booth where in addition to an extensive display of standard surgical instruments in both stainless steel and chromium plate, they will show many recent developments. The new Mueller bone surgery engine with a complete line of accessories will be demonstrated. The Zachary Cope modification of the DeMartel Clamp as well as the DeBailey and Devine Colostomy Spur Crushers will be exhibited. A stop at Mueller's booth is always interesting and instructive.

PET MILK SALES CORPORATION—Booth A

An actual working model of a milk condensing plant in miniature will be exhibited by the Pet Milk Company in Booth A. This exhibit offers an opportunity to obtain information about the production of Irradiated Pet Milk and its uses in infant feeding and general dietary practice. Miniature Pet Milk cans will be given to each physician who visits the Pet Milk Booth.

PETROLAGAR LABORATORIES, INC.—Booth 8

This year Petrolagar Laboratories, Inc., will offer in addition to samples of the Five Types of Petrolagar, an interesting selection of descriptive literature and anatomical charts. Ask the Petrolagar representative, Mr. R. P. English, to show you

the new HABIT TIME booklet. It's a welcome aid for teaching bowel regularity to your patients.

PHILIP MORRIS & CO. LTD., INC.—Booth 22

Philip Morris & Company will demonstrate the method by which it was found that Philip Morris Cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes. Their representative will be happy to discuss researches on this subject, and problems on the physiological effects of smoking.

W. B. SAUNDERS COMPANY—Booth 30

W. B. Saunders Company, Philadelphia and London, will exhibit a complete line of their books. Of particular interest to the profession are many new books and new editions, including the new (second) edition of Callander's "Surgical Anatomy," the new (11th) edition of Scudder's "Fractures," Cutler's new book on "Cancer," Morrison's new work on "Nose, Throat and Ear," Beck's new Hematologic Technic, the new (6th) edition of Norris & Landis' "Chest Diagnosis," the new (4th) edition of Boyd's "Surgical Pathology," Reimann's work on "The Pneumonias," Barsky's "Plastic Surgery," the new (7th) edition of DeLee's "Obstetrics," the new (18th) edition of the "American Illustrated Medical Dictionary," the new "Mayo Clinic Volume," Murphy's new book on "Pernicious Anemia," the new (2nd) edition of Wolf's "Endocrinology," the new (2nd) edition of Pelouze's book on "Gonorrhea," Mallory's "Pathological Technique," Crile's "Surgical Treatment of Hypertension," the new (2nd) edition of Andrew's "Diseases of the Skin," the new (3rd) edition of Beckman's "Treatment," the new (3rd) edition of Curtis' "Gynecology," and of course such standard works as Bickham's "Operative Surgery," Warbasse-Smyth's "Surgical Treatment," Cecil's "Medicine," Herman's "Urology," Christopher's "Textbook of Surgery," and his "Minor Surgery."

S. M. A. CORPORATION—Booth 9

Among the technical exhibits at the convention this year is an interesting new display which represents the selection of infant feeding and vitamin products of the S. M. A. Corporation. Physicians who visit this booth may obtain complete information as well as samples of S. M. A. Powder and the special milk preparations—Protein S. M. A. (Acidulated), Alerdex and Hypo-Allergic Milk.

SMITH, KLINE, FRENCH LABORATORIES—Booth C

Smith, Kline & French Laboratories, believing that many physicians dislike efforts to make them register, have arranged their exhibit for self-service.

Information about "Benzedrine Inhaler," "Benzedrine Sulfate Tablets," "Benzedrine Solution," Feosol Tablets and Feosol Elixir, Oxo-ate "B" Tablets, Pentnucleotide, and Eskay's Neuro Phosphates may be obtained from the convenient literature dispenser. If additional information is desired, the representative will be glad to answer any questions.

E. R. SQUIBB & SONS—Booth 19

Physicians attending the Illinois State Medical Society meeting are cordially invited to visit the Squibb Exhibit. The complete line of Squibb Vitamin, Glandular, Arsenical and Biological Products and Specialties, as well as a number of interesting new items will be featured.

Well informed Squibb Representatives will be on hand to welcome you and to furnish any information desired on the products displayed.

STANDARD X-RAY COMPANY—Booth 17

The Standard X-Ray Company of Chicago invites you to visit their booth and see the Model "EBRF" 100 Shockproof Diagnostic X-Ray unit. This unit may be installed in a room as small as 8x10 feet. It is ideal for office use and has a tilting radiographic and fluoroscopic table with built-in counter-

balanced Bucky Diaphragm, a counter-balanced rail mounted tube stand. The generator is available in 60 and 100 milli-ampere models and is of sufficient capacity for superficial therapy. The PRICE—surprisingly low.

WHITE LABORATORIES, INC.—Booth 13

White Cod Liver Oil Concentrate will offer for your consideration, information covering the entire field of cod liver oil concentration, together with clinical data and evidence concerning the efficacy of its Liquid, Tablet and Capsule concentrates, as well as of cod liver oil, per se.

Informed representatives, and descriptive literature, reprints and excerpts will further demonstrate cod liver oil efficacy, and will point out White Laboratories, Inc., contributions in the vitamin A and D field.

White Laboratories, Inc., is the world's largest manufacturer of cod liver oil concentrates, and is one of the largest users of cod liver oil for pharmaceutical purposes in the world.

All physicians are cordially invited to visit the booth.

JOHN WYETH & BROTHER, INC.—Booth 10

John Wyeth & Brother, Incorporated, will display a number of their pharmaceutical specialties including: Kaomagma intestinal adsorbant; Amphojel, Wyeth's Alumina gel, antacid; Silver Picrate, "accepted" for use in the treatment of Trichomonas vaginitis; Bewon Elixir, a palatable dosage form of crystalline Vitamin B₁, and other newer preparations of interest to both general practitioners and specialists.

ZUCK AND EATON—Booth D

Zuck & Eaton, Rockford, Physicians surgical supply dealers, pharmaceutical, biological and chemical distributors, will feature at their booth, Stille Stainless Steel Instruments, Picker X-Ray Equipment, and Burdick Physio-Therapy Equipment.

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NINETY-NINTH ANNUAL MEETING ROCKFORD, ILLINOIS

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 Mrs. Homer VanLanding- Mrs. C. L. Leonard
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 Mrs. H. W. Palmer Mrs. E. L. Mertz
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MRS. JOHN A. GREEN.....Chairman
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LOCAL COMMITTEES FOR SOCIAL EVENTS

TUESDAY, MAY 2, 1939

LUNCHEON AT FOREST HILLS COUNTRY CLUB

MRS. E. T. LEONARD.....Chairman

Mrs. Warren Miller Mrs. Arthur Connell
 Mrs. Roger Bissekumer Mrs. E. G. Anderson
 Mrs. Bruce Canfield Mrs. E. E. Ochsner
 Mrs. W. J. O'Donnell Mrs. T. Arthur Johnson

TEA at Rockford College

MRS. W. H. ELMER and MRS. E. H.

QUANDTChairmen

Mrs. Perry Anderson

DINNER at Rockford Woman's Club

MRS. C. A. CIBELIUS.....Chairman (Dinner)

Mrs. John O. Heald

MRS. W. J. BRYAN.....Chairman (Program)

MRS. J. S. LUNDHOLM...Chairman (Style Show)

Models for Style Show

Mrs. F. L. Heinemeyer Mrs. King Woodward
 Mrs. H. Dick Countryman Mrs. E. W. Goembel
 Mrs. R. E. Tenney Mrs. Wm. K. Ford
 Mrs. Theodore Lang Mrs. T. H. Culhane
 Mrs. Harry Culhane Mrs. E. G. Quattlebaum
 Mrs. R. C. Bourland Mrs. Paul T. Johnson
 Mrs. W. L. Crawford Mrs. H. W. Ackemann

Mrs. Homer F. Moore

WEDNESDAY, MAY 3, 1939

PRESIDENT'S LUNCHEON at Rockford Woman's Club

MRS. WILLIAM K. FORD.....Chairman

Mrs. Bruce Canfield Mrs. J. T. Rankin
 Mrs. J. L. Probasco Mrs. C. L. Leppert

TEA at Rockford Art Gallery

MRS. ARTHUR PEARMAN.....Chairman

Mrs. L. A. Shultz Mrs. John A. Green
 Mrs. W. R. Franklin

WOMAN'S AUXILIARY PROGRAM

ALL General Meetings and Social Activities are open
 to all doctors' wives.

MONDAY, MAY 1, 1939

1:00—Registration in the Hotel Faust Lobby.

TUESDAY, MAY 2, 1939

9:00—Registration in Hotel Faust Lobby.

10:00—Pre-Convention Board Meeting—Belle Keith Art Gallery of Rockford Woman's Club.

11:00—Round Table Discussions—Belle Keith Art Gallery of the Rockford Woman's Club.

Conference of District Councilors and Organization.
 Chairman—Mrs. C. C. Winning.

12:30—Luncheon at Crystal Room of Nelson Hotel.

Mrs. William Raim Presiding.

Mrs. E. T. Leonard, local chairman.

Program:

Address of Welcome—Mrs. W. R. Fringer.

Convention Announcements—Mrs. H. J. Dooley.

Address—Dr. Nathan Smith Davis, III, President
 Elect, Chicago Medical Society.

2:00—Opening Business Session—Rockford College
 Chapel.

Invocation—Rev. John Gordon of Second Congrega-
 tional Church of Rockford.

Welcome—Mayor Charles F. Brown of Rockford.

Response—Mrs. G. Henry Mundt.

4:30—Tea at Rockford College.

Mrs. W. H. Elmer and Mrs. E. H. Quandt, local
 chairmen.

7:00—Dinner at Rockford Woman's Club.

Mrs. C. A. Cibelius, dinner chairman.

Mrs. W. J. Bryan, program chairman.

Mrs. J. S. Lundholm, style show chairman.

Guest of Honor—Mrs. R. K. Packard, President-
 Elect of Woman's Auxiliary, American Medical Asso-
 ciation.

WEDNESDAY, MAY 3, 1939

9:30—Business Session—Belle Keith Art Gallery of
 the Rockford Woman's Club.

Memorial Services—Mrs. W. C. Bornemeier, chair-
 man.

1:00—President's Luncheon—Rockford Woman's
 Club.

Mrs. William Raim presiding.

Mrs. Wm. K. Ford, chairman.

Speaker—Dr. Rock Sleyster, President-Elect of the
 American Medical Association.

3:00—Post-Convention Board Meeting—Belle Keith
 Art Gallery, Rockford Woman's Club.

4:30—Tea at Rockford Art Association—Mrs. Ar-
 thur Pearman, Chairman.

7:00—President's Dinner Dance and Bridge.

SOCIAL FUNCTIONS FOR ALL LADIES

TUESDAY, MAY 2, 1939

12:30—Luncheon in Crystal Room at Nelson Hotel.

4:30—Tea at Rockford College.

7:00—Dinner at Rockford Woman's Club. Pro-
 gram and Style show.

WEDNESDAY, MAY 3, 1939

1:00—President's Luncheon at Rockford Woman's
 Club.

4:30—Tea at Rockford Art Association.

7:00—President's Dinner Dance and Bridge.

Original Articles

THE RECTAL STRICTURE OF LYMPHOGRANULOMA VENEREUM

COLLIER F. MARTIN, M. D.*

PHILADELPHIA

and

THEO. F. REUTHER, M. D., M. Sc. (Med.)

CHICAGO

Rectal stricture has been recognized for many years and for almost as long there has been described a type of rectal stricture not due to malignancy and which does not follow trauma, chemical or physical agents and which is often associated with syphilis or gonorrhea. Because of its frequent association with these two venereal diseases it had been described as being syphilitic or gonorrheal in origin. This was further confirmed by the study of the tissue removed from these areas when the pathologist described an endarteritis and small gumma formation. However it was found that although the associated syphilis was vigorously treated the stricture remained and was uninfluenced and progressive. In more recent years it has been found that this type of stricture is caused by lymphogranuloma venereum. That this condition was a clinical entity was proposed by Thomas Copeland in 1811.¹ In 1913 Durand, Nicolas and Favre² described a type of inguinal adenitis secondary to a primary lesion on the genitals which was neither gonorrheal nor syphilitic in origin and which was caused by a filterable virus. This newly recognized clinical entity was called lymphogranuloma inguinale or lymphopathia venerea but now the term of lymphogranuloma venereum has been adopted as the official designation. The identification of this disease was made positive by the work of Frei in 1925 when he reported an intracutaneous test which was specific.³

GENERAL MANIFESTATIONS

Lymphogranuloma venereum is an infectious disease usually transmitted by sexual contact. Over 80% of the patients observed were colored. The incubation period varies from five days to several weeks. The initial lesion is usually genital but may also be extragenital, just as the

primary lesion of syphilis may also occasionally be extragenital. (Fig. 1). It is a small painless



Fig. 1. Primary lesion located on frenum, with associated bilateral bubos.

herpetiform or papular lesion which may occur in the urethra or vagina as well as on the external genitals. This lesion may last several weeks and usually within two weeks after its appearance the patient may develop symptoms of generalized aching, loss of appetite and perhaps constipation. There is a temperature rise to 100 to 104 degrees F. This febrile period may last several weeks and be associated with a normal white blood cell count or even a leucopenia. The Frei test is positive after ten to 14 days.

In the male there is the development of an inguinal adenitis which may be either unilateral or bilateral and which is usually suppurative. The glands may be incised or they may drain spontaneously and leave chronic discharging sinuses which heal slowly. In the female there is no inguinal adenitis unless the lesion is on the vulva. However, as the lesion in the female is usually in the vagina or on the cervix the route of spread is to the pelvic and perirectal lymphatics. This difference in the route of spread has been well shown by the work of Nesselrod,⁵ and explains why the characteristic lesion in the male is the inguinal adenitis or a filiform stricture of the urethra, and in the female is the rectal stricture with secondary ulceration and esthiomine. In both sexes the lymphatics become obstructed and the regions drained show some

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degree of elephantiasis in the late stages. Fig. 2.

The laboratory examination show a moderate or severe secondary anemia, an increased blood

occur in chronic granulomatous processes, with round cell infiltration and giant cell formation, and can best be described as having the appear-



Fig. 2. Ulceration and elephantiasis of vulva.

sedimentation rate and a normal white count unless there is marked ulceration or abscess formation. The blood chemistry shows a normal serum albumin with a moderate or marked increase in the serum globulins. This produces an inversion of the albumin globulin ratio and therefore the Takata test is usually positive. These findings have been reported by Jones and Rome,⁶ who also give an excellent bibliography, and discuss the many general types of infections and the wide distribution of the disease.

THE FREI TEST

The diagnostic intracutaneous test devised by Frei consists in the use of an antigen which is prepared from pus aspirated from a suppurating gland or from excised tissue, which is sterilized and diluted one to ten in normal saline. The dose is 1/10 cc. injected intradermally and a positive reaction is an area of redness and swelling at least .5 cm. in diameter appearing at the site of injection within 48 to 72 hours and lasting for a week or more as a palpable indurated papule. This test is of greater value in the diagnosis than other single clinical or laboratory procedure. Figure 3.

Histologic examination of tissue removed by biopsy from the stricture area shows changes that



Fig. 3. Postive Frei test on forearm of white male.

ance of tuberculous tissue without caseation. Necrosis or suppuration does occur. To the experienced pathologist familiar with the disease its diagnosis offers little difficulty.

The associated diseases most often found are gonorrhea and syphilis. These are associated because of the similarity in the method of spread and are not otherwise related.

In a series of 419 cases of rectal stricture observed by one of us (C. F. M.) it was found that about 25% gave positive Wassermann reactions.

SYMPTOMS

The symptoms associated with stricture formation are those of a chronic progressive obstruction of the rectum or urethra associated with ulceration and infection. The patient with a rectal stricture becomes progressively constipated and may develop either a fecal impaction or a diarrhea. There is a constant discharge of pus or bloody mucus from the anus. There may be associated multiple fistulae so characteristic of the condition or esthiomene of the anus or elephantiasis of the genitalia.

Examination reveals a narrowing of the rectum usually within reach of the examining finger. The tissue is hard and resembles scar tissue. It may be irregular or somewhat nodular to the touch but the opening is usually always centrally placed even at the onset. It differs from a malignancy in this early involvement of the entire lumen of the rectum, and it does not bleed so easily and is not so stony hard. The entire area may be fixed to the surrounding perirectal tissues. The sensation imparted to the finger by a stricture of lymphogranulomatous origin is of an obstruction that will not allow the finger to pass, while in a malignancy the

process feels as though it was forcing the finger back out of the rectum.

Proctoscopic examination shows the lower end of the stricture with or without the associated ulceration. The mucosa is usually inflammatory and may contain nodules below the lesion. The lumen of the stricture is usually denuded of mucosa and above the strictured area—if a small proctoscope is passed—can be seen the ulcerated and ragged mucosa due to infection and retained feces. An excised stricture has the appearance of Figure 4.

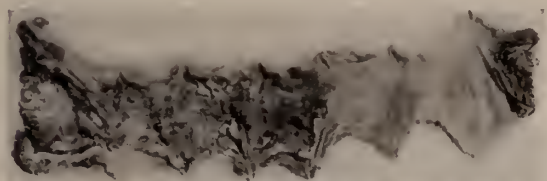


Fig. 4. Rectal stricture removed at operation by Dr. W. E. Lee.

DIAGNOSIS

The diagnosis is made by the use of the Frei test in all suspected cases and we believe the test to be absolutely specific. It may be possible for a malignancy to occur in the lymphogranulomatous area secondarily but this has rarely been noted in the series of cases contacted. The x-ray appearance of the strictured area with the con-



Fig. 5. X-ray film showing rectal stricture with associated sinuses. Dr. Finkelstein.

necting sinuses is fairly characteristic. (Figure 5). Biopsy is of value in ruling out malignancy.

TREATMENT

Treatment of lymphogranuloma venereum is very unsatisfactory. There is no specific remedy.

We feel that, in the present state of therapeutic ignorance, if the patients do not die of the disease they all die with it. The general treatment consists of a low residue, high calorie diet with adequate vitamins and mineral salts. The anemia associated with the disease responds well to the administration of iron in any of the usual forms. Mineral oil by mouth is of value in producing soft stools and in a measure combating the constipation. Many other remedies have been used in several series of cases but all measures tried have been of no value. The use of sulfanilamide has been reported to give symptomatic improvement,^{4,5,8} but we have had no experience with this drug. The most satisfactory general measure we have used is the injection intracutaneously of Frei antigen once or twice a week. This causes improvement in the symptoms, increases the weight and sense of well-being but has little or no effect on the stricture.

Local treatment consists of cleanliness, irrigation or instillation of any of the usual mild antiseptics. Dilatation of the stricture by the use of graduated sounds may be very gently done by the physician. This, however, has no value as a permanent cure. Carbondioxide snow, diathermy, proctotomy and the Jelk's operation have all been tried but discarded as unsatisfactory.

We feel that the ultimate treatment in all cases is a colostomy and feel that this should be done early. The ends of the bowel must be separated so that there can be no spread of the disease process by continuity. Excision of the rectum may be necessary but this should be delayed until after the general improvement in the patient's condition that always occurs following the making of the colostomy. We realize that excision of the rectum in these cases is a more formidable operation than excision for cancer and that it has a much higher mortality rate. For this reason the usual treatment has been a palliative colostomy, injections of Frei antigen and general care and symptomatic medication.

SUMMARY

1. Lymphogranuloma venereum is a generalized disease, usually of venereal origin and which in the female produces characteristically a rectal stricture.
2. This stricture must be differentiated from

cancer of the rectum by examination, biopsy and the Frei test.

3. Treatment of this condition is unsatisfactory and we believe the early palliative colostomy, the injection of Frei antigen and symptomatic medication is the treatment of choice.

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5. Hutchinson, A.: Treatment of bubo with sulfanilamide, Lancet 1: 1047, 1938.
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THE MENOPAUSE AND PAINFUL STIFFENING OF THE SHOULDER

WALTER W. VOIGHT, M. D.

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The menopause brings many discomforts to women, induced by disturbances in equilibrium in the endocrine system which become particularly manifest in the sympathetic-parasympathetic nervous systems. These manifestations may drag themselves out over a long period of time, then stabilization is established in the affected systems. Also other ailments, such as an increased tendency to the development of varicosities, are of a character to diminish the ability to work and to enjoy life.

Another bent of these disturbances of the biologic equilibrium of the endocrines at the menopause is the development of general rheumatic symptoms and the prognostically unfavorable affect on the course of an arthritis deformans. Changes in the vasomotor system play an important rôle in the joint troubles of the woman of advanced years, and especially is this true in the shoulder joint which, although it has no weight bearing function, is concerned in an enormous amount of activity.

The cases forming the basis of this discussion were women during or at the beginning of the

climacterium who were all engaged actively as typists, pianists or teachers using the arm a great deal in their demonstrational teaching methods.

The characteristic symptom in these cases was a marked pain in the right shoulder—the “used” arm—at first causing discomfort in the abduction of the arm and then leading to progressive limitation of this motion and eventuating, in one case, in complete adduction contracture. In one case of a left-handed person the left shoulder was affected.

Following the onset of pain and limitation of abduction, there develops as a rule limitation of rotation movements, the motion anteriorly showing the least interference with movement.

During this time palpation and roentgen examination of the shoulder joint reveals no changes. It is evident, therefore, that the seat of the disease and the disturbances in mobility are situated extracapsularly. In the male this condition is ascribed to trauma or to infection, e. g., of the fingers, involving the subdeltoid connective tissues by way of the lymph channels. The term “peri-arthritis humeroscapularis,” which has been given this condition, characterizes its inflammatory nature and its location outside the true shoulder joint.

In the author's cases neither trauma nor infection could be considered as an etiologic factor; in all a relationship to the menopause was to be discovered.

Perhaps it would not be out of place to consider the movement complex in and about the shoulder joint. It is of an extremely complicated nature and is not limited solely to the motions exhibited by the shoulder joint itself. With the assumption by the human of an upright posture, the shoulder has been relieved of the weight bearing function. While the thigh is attached to the pelvic ring and, consequently, to the body itself by means of the strongest joint in the body, the scapula is connected with the clavicle, and thereby with the general skeleton, by means of a very tiny joint. The scapula, however, is attached by muscle structures not only to the skull but to almost the entire vertebral column and almost all the ribs. The arm is hung to the scapula and fastened to it by several muscles. If the shoulder blade moves, the arm moves with it. Thus, all the movements of the shoulder blade have but one purpose: to facilitate as

much as possible the arm's activity. The entire scapula is merely an adjustment apparatus for its humeroscapular joint surface.

The clavicle directly accompanies the arm in all its excursions, the medial end remaining fixed to its sternal attachment, while the lateral portion is capable of motion through a circle 10 cm. in diameter. In its functioning, therefore, it assumes the character of a ball and socket joint, as does also the joint between the acromion and clavicle. The acromioclavicular joint, though insignificant in appearance, is indispensable to any motion on the part of the shoulder blade, as this is the only place at which the big scapular bone is articulated to the body skeleton. Upon

rule, contract with all their fibers simultaneously; a part of a muscle may act as antagonist to its other parts. When all these muscles are tensed, the shoulder blade remains fixed and immobile. If one of these muscles is to contract, the relaxation of its antagonist is necessary, as well as the cooperation of the others. If these muscles be aligned in contractors and their antagonists, two muscle bodies with the intercalary portion of the scapula form a sort of sling or loop, and four separate loops may be differentiated. It is of importance to note that in every ordered movement in the joints of the shoulder girdle there is simultaneously involved smooth mechanism of two so-called muscle joints: the one

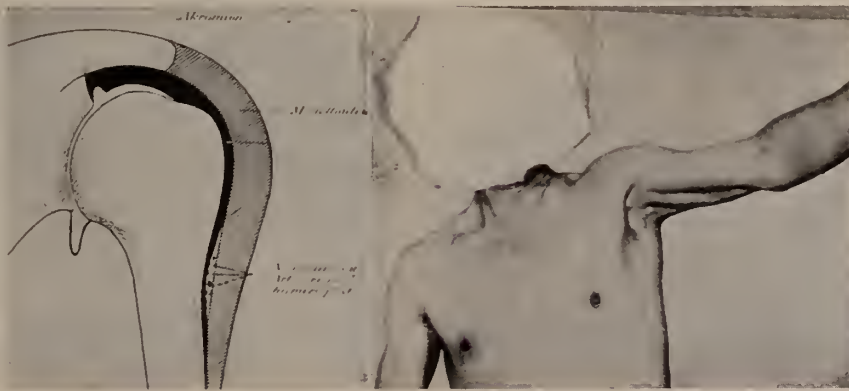


Fig. 1. Subdeltoid space (black).

Fig. 2. Auxiliary muscles in effort to raise arm in periarthritis.

the mobility of the acromioclavicular and sternoclavicular joints depends the excursion possibilities of the scapula and, since the arm depends from the shoulder blade, its motion is in turn more or less limited by that of the scapula. The clavicle does not directly influence the movements of the shoulder blade and arm but, since it is connected up by means of the trapezius muscle with the skull and by means of the pectoralis with the arm, it follows the play and counter-play of these muscles. The scapula, in its forward movements (pectoralis minor and serratus anterior) and its backward motions (trapezius and rhomboideus), carries the clavicle with it. Thus, the clavicle is in a position to increase the latitude of the movements of the shoulder blade and arm. From the body trunk to the shoulder blade pass the muscles levator scapulae, trapezius, rhomboideus, serratus anterior and pectoralis minor. They do not, as a

intermediating the movements between the chest wall and the subscapularis covered anterior surface of the shoulder blade; the other consisting of the space extending between the outer aspect of the humeroscapular joint and the under surface of the deltoid and parts of the pectoralis major which together go to make up a sort of cap-like covering for the shoulder joint itself. The muscle joint under the deltoideus is extensively involved in every movement of the shoulder girdle: every disturbance, every decrease in counter-frictional capacity, every pain symptom in the region of this periarticular space must necessarily lead to a limitation of motion for the entire shoulder. It is disturbances of this sort which make up the chief contingent of the cases of painful stiffening of the shoulder. Of course, there are other disturbances, such as disease of the shoulder joint itself, bone injuries (fractures, luxations, acute and chronic inflammatory

conditions) which must be excluded before the periarticular location of the trouble can be decided upon.

After excluding disease of the joint, then the form of extra-articular painful stiffening of the shoulder should be decided upon, and they may be divided as follows: (1) arthritis in the acromioclavicular joint; (2) true peri arthritis humeroscapularis; (3) bursitis, which is seldom primary, frequently involved secondarily.

Arthritis of the acromioclavicular joint is far less frequent than the peri arthritis. This form will be discussed first as an instance of disease in a true joint in the region of the shoulder,

ful. Rest, hot air treatment and injections of colloidal sulphur are recommended. Occasionally resection of the joint and interposition of fascia will be necessary.

The essence of true peri arthritis humeroscapularis lies in a painful impairment of the counterfrictional capacity of the loose connective tissue space lying between the capsule of the humeroscapular joint on the one hand and the overlying muscular cap on the other. Secondary changes in this area will, of course, develop. Since this subdeltoid space is of importance for practically all movements in the shoulder joint, it is natural that even a slight amount of impair-



Fig. 3. Abrupton of muscle insertions (arrow).



Fig. 4. High position of humerus (shrinking of muscles) as compared with 4 (normal position).

a joint which stands next in importance to the humeroscapular joint.

In the understanding of the painful stiffening of the shoulder, a consideration of the chronic form of this condition is of significance. It is usually ascribed to a blunt injury to the shoulder or to overwork.

One is able to describe rather precisely the subjective symptoms and the disturbances of function. As a rule, there is localized pain on pressure over the joint. Characteristic is the pain on movement radiating to the vault of the shoulder joint. Due to this pain and the consequent reflex muscular contraction, there is limitation of the lateral and anterior motions of the arm at the shoulder joint; occasionally crepitation is noted and later the roentgen film will exhibit bony changes.

Should difficulties of diagnosis develop, an injection of a solution of novocain may be help-

ment of the lubricative capacity in this area should give rise to pronounced disturbance of mobility of the shoulder joint.

It may be noted that this pseudo-articular space terminates peripherally at the attachment of the deltoid to the humerus; above, however, it extends under the acromion and the processus coracoideus into the deep recess behind the pectoralis.

Adhesions and cicatricial formation in this joint-like space must lead, on purely mechanical grounds, to impairment of function. These adhesions and cicatrices may be left as the residue of inflammation or as sequelae of absorbed and organized hematoma. The latter is the most frequent basis for the peri arthritis humeroscapularis. Trauma may be very slight, but after a few days or weeks there is increasing difficulty in elevating the arm; a noticeable but seldom complete limitation of motion in the

shoulder brings the patient to the physician. At this time an injury to the humeroscapular joint is assumed or a diagnosis of neuritis is made, which is easily understood as the axillary nerve is embedded in the cicatricial adhesions between the musculoarticular surfaces. The pain of periarthritis, however, may occur without involvement of the axillary nerve but by pulling of the scar on the notably sensitive articular capsule. That a chronic form of trauma may lead to a periarthritis in individuals disposed thereto is shown in the author's material, the predisposition consisting in the menopausal disturbances of the body and the chronic trauma in the excessive use of the arm when using the typewriter or the piano.

As to the etiology, Pirquet of Vienna assumed that there is an allergy proper to the age period of life. He found that in the female children the number of cases of pulmonary tuberculosis reaches its highest point sooner than in the case of male children, and he felt that this manifestation was related to the earlier onset of the growth period of puberty in the female. About the time of puberty there is a change in the character of reaction to the tubercle bacillus by the body harboring it. This change is proper to the domain of allergy. In other infectious diseases, also according to Pirquet, the chief factor is not the infectious agent but the disposition of the patient. This constitutional predisposition factor in the author's cases was related to the age of the patient. The malignant new growths are evidently a disease which is related to old age. Thus an allergy of the climacterium may quite well be assumed which favors the development of joint and muscle trouble.

These considerations also give a hint as to the proper method of treatment. Arthropathia ovaripriva and the trophostatic osteo-arthritis (Kienboeck) of the weight bearing bones of the human trunk are recognized. The periarthritic disease picture in the shoulder of the woman at the menopause has, so far as the author knows, not previously received mention.

The periarthritic disease picture may also be called forth by an awkward or an unaccustomed or excessive movement accompanied by a tearing pain. Here there has occurred a rent in the muscle tissue at its attachment. The tendons of

the supraspinatus and subscapularis are most frequently involved. Changes in the appropriate muscles follow those in the connective tissue space, whether they be in the subdeltoid or subscapular space. There develops contraction in the shoulder joint muscles analogous to the contraction of the muscles of the abdominal wall, the *défense musculaire*, in appendicitis. Since there is also the weight of the depending arm acting in an adduction sense, there results with time an adduction contracture with internal rotation at the shoulder joint. The pathological findings in the subdeltoid and in the space under the subscapularis muscle, together with the contracture of the shoulder muscles, are proper objects of the treatment which will be discussed later.

In the diagnosis of this condition the most important factor is to exclude an arthritis humeroscapularis. Here all movement of the arm is limited and painful from the start. In periarthritis this is not the case, as some movement is possible in the shoulder joint itself. Just as in arthritis humeroscapularis, abduction of the arm is markedly limited, but the anterior motion of the arm is usually retained. Crepitus may appear in both conditions and cannot be used as a point of differential diagnosis. A history of injury may give a clue and the roentgen appearance will disclose an uninvolved shoulder joint in periarthritis, but here there is frequently observed an abnormally high position of the head of the humerus as an expression of the muscular contracture drawing up and adducting the upper arm.

The treatment of the condition depends upon whether it is present in an acute, subacute or chronic form. In the acute form the predominant manifestations are pain and muscle contracture; in the subacute form, adhesions and muscular contraction, and in the chronic, in addition to adhesions, atrophy of the deltoid and the articular capsule. Immobilization of the arm is important, especially in the early cases, and for this purpose the arm sling should be rejected and an abduction splint used instead, retaining the arm at the same time in a position midway between lateral and medial rotation, thereby maintaining equal relaxation of both lateral and medial rotators of the arm. Abduction should not be carried up too far, thus avoiding impingement of the tuberculum majus and

its muscle attachments upon the acromion process.

Chronic periarthritis is the result of cicatricial adhesions and muscular atrophy. For this condition forceful stretching under general or local anesthesia has been recommended. In the author's cases such measures were not needed and it is felt that such a procedure may do further injury with hematoma production and a repetition of the original process and its sequelae of adhesions and atrophy. Payr used injections of pepsin-Pregl solutions into the connective tissue spaces for the purpose of loosening the cicatricial adhesions, a treatment whose rationale is obvious. The author has not used this method but has brought his cases to recovery by iontophoresis with histidin salve and massage with the additional use, in appropriate cases, of the abduction splint. To these methods the author adds injections of large doses of progynon, thus giving battle to the *causa morbi* as well as to the local condition. The local methods were extended to the spaces under the deltoid and subscapularis.

All of the author's patients returned to normal mobility again, with the exception of one instance of retraction of the articular capsule where the patient was unable to bring to bear the requisite patience in carrying out treatment.

RESUMÉ

1. The disease picture of menopausal periarthritis humeroscapularis is indicated.

2. The condition described apparently consists of an allergy of the menopausal state.

3. In periarthritis humeroscapularis the shoulder joint itself is not involved.

4. Recovery under large doses of progynon and local histidin-iontophoresis.

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LIPOCALCINOGRANULOMATOSIS WITH RECURRENT SALIVARY CALCULI

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CHICAGO

Current literature records many cases of lipocalcinogranulomatosis especially of the female breast. The following report is offered as a case of lipocalcinogranulomatosis of unknown etiology, unusual location, and an interesting coincidence with recurrent salivary calculi. We were unable to find a similar case in the literature.

REPORT OF CASE.

A woman, aged 46, complained of swelling and pain in the right submaxillary region, from which she had suffered for about 18 months. One year ago, she was operated upon and, supposedly, calculi were removed. She was well for a couple of months when the same complaint recurred. She was sent to St. Joseph's Hospital because of recurrent salivary calculus. Her family, personal, and past history was irrelevant, except for helminthiasis at the age of 13 with subsequent anemia for which she was treated for a number of years. She definitely stated that she had never received injections of any kind. On admission, she was found to be rather obese with fat deposits predominantly about the hips and breasts. She was 158 cm. tall, and weighed 158 pounds. In the right submaxillary region there was a rather diffuse, tender swelling corresponding to the site of the submaxillary gland. No scar was visible. The mucosa of the floor of the mouth was inflamed and about one-half inch from the opening of Wharton's duct a spindle-shaped stone, the size of a wheat grain, could be palpated. This was demonstrated by an x-ray picture. The stone was removed by intraoral incision. A few days later, an old perineal laceration was repaired. Healing took place without complications, and the patient left the hospital on the tenth postoperative day.

A month later she presented herself with a complaint of low backache. Gynecological findings were negative. Suspecting some ileosacral trouble, x-ray pictures were taken which, to our surprise, revealed calcareous shadows as shown in Fig. 1. Examination of the patient showed that correspondingly to the shadows, masses could be palpated on the posterior surface of the gluteal region at the level of the posterior superior iliac spine. These masses were subcutaneous, not attached to the skin, and freely movable above the fascia with the relaxed fat tissue. They were not tender on pressure. In the right submammary region another mass the size of a hazelnut, slightly tender to pressure, was felt. There were some nodules in the left breast that gave one the impression of chronic cystic mastitis. The masses found on the chest produced no x-ray shadow. On questioning, the patient admitted that she has noticed the masses mentioned for

"Doctor," said a patient to me, "I hope you will be different from the many physicians whom I have consulted. I hope you will examine the x-ray films less and me more."—Herrick.

about two years but, as they were painless and showed no increase in size, they did not worry her and she did not consider them worth mentioning.

Considering the possibility of some abnormality of calcium metabolism, blood chemistry studies were made. These showed perfectly normal blood calcium, phosphorus, and phosphatase levels.

One of the masses in the right hip region was re-

moved surgically. It was found to be located in the subcutaneous fat tissue to which it was firmly adherent and could be removed only with a layer of fat.

Healing occurred by primary intention. The



Figs. 1 and 2—Calcified lipogranuloma at pelvis.

moved surgically. It was found to be located in the subcutaneous fat tissue to which it was firmly adherent and could be removed only with a layer of fat.

The following is the report of the pathologist:

The specimen consists of a hard lump, the size and shape of a large pecan. It is covered all around by a layer of strongly adherent but otherwise normal looking fat tissue, about 3 to 5 mm. in thickness. The lump cuts with considerable difficulty because it has a stone-hard shell, about 1 mm. thick. The inside of the lump consists of a dirty brownish-white, fatty, gritty, friable mass. Microscopic study of the specimen was made after decalcification.

Microscopically, Fig. 2, the surrounding fat tissue (A) is completely normal. The outer layer of the shell consists of moderately coarse strands of connective tissue in which at places small collections of lymphocytes and plasma cells are scattered. The deeper layers become more and more hyaline and poor in cells. Large areas show no nuclear staining at all and there is extensive calcification in sharply circumscribed irregular spots; (B) as evidenced by dull blue staining with hematoxylin. There is, however, no actual bone or osteoid formation. The innermost layer is of a highly cellular granulation tissue, (C) with many thick-walled small vessels with great tendency to fibrosis. The cells are fibroblasts and there are large numbers of

macrophages with foamy cytoplasm present. Many of the macrophages contain brown pigment granules that give the Berlin blue reaction. There are extensive areas of necrobiosis (D) in the granulation tissue. In the necrotic parts, many clefts with straight or angulated outlines, (E) suggesting the sites of dissolved cholesterol crystals, are seen.

COMMENT

Lipophage granuloma (Abrikosoff), lipogranulomatosis subcutanea (Makai) and lipocalcino-granulomatosis (Teutschlander), are terms applied to a group of clinical pictures the pathological-anatomical basis of which is a formation of fat granulomas around foci of fat tissue necrosis. As to factors, oil injections, trauma, diathermy, hot compresses and peri-inflammatory reactions are mentioned but there are many cases in which granulomas seemed to have developed spontaneously. Pathologically, they have the character of foreign body granulomas. Their ultimate fate, according to Abrikosoff, may be either: 1. complete reabsorption; 2. cyst formation; 3. fibrosis; or 4. calcification. According to Barr, localized deposition of calcium may be due to either systemic factors or local nutritional disturbances. If there is a severe metabolic change in the tissues or deaths of the cells, cal-

cium may be deposited in the damaged tissues. The stone formation is caused by the precipitation of calcium salts from gland secretions. Both of these conditions may develop without any demonstrable change in calcium metabolism.

Very many cases of lipogranulomatosis, especially of the female breast are on record (Har-



Fig. 2. Microscopic study of removed calcified tumors of the back.

- A. Fat tissue.
- B. Calcified areas.
- C. Cellular granulation tissue.
- D. Necrobiosis.
- E. Dissolved cholesterol crystals.

bitz, Pfeil, etc.) but the number of calcified lesions is comparatively small. In our opinion, this may be due to the fact that most women are conscious of the danger of masses in the breast and, therefore, seek early medical aid. Calcification is known to be a slow process. Probably most lesions which do not reabsorb completely or heal by fibrosis but go on to cyst formation would sooner or later become calcified.

The clinical importance of lipocalcinogranulomatosis is its differential diagnostic aspects. Lipocalcinogranulomatosis of the female breast may be mistaken for carcinoma, as it occurs most

often in women of cancer age. Its symmetrical development, however, may give the clue to correct diagnosis. In our case, as far as etiology is concerned, there was no gross traumatism known to the patient. It may be considered as a case of spontaneous lipocalcinogranulomatosis, but certainly, the site of the lesions suggests the possibility of repeated slight trauma by pressure of the iliac bone in recumbent position, which, together with an abnormally increased vulnerability of the fat tissue, may account for their development. The nodule under the right breast is probably an early lesion of the same kind, but the nodules in the left breast could not be differentiated clinically from chronic cystic mastitis, and the patient did not submit to a biopsy. The extensive calcification of the nodules in the present case can be explained by their long symptomless existence.

The coexistence of the calcified subcutaneous nodules with recurrent salivary calculi may be a mere coincidence or the two conditions may be etiologically related. Though laboratory findings failed to demonstrate any abnormality of the calcium level, it is well known that there are many conditions with multiple localized calcifications of an apparently systemic character not reflected by changes in the blood calcium or phosphorus level.

SUMMARY

A case of multiple calcified subcutaneous lipogranulomas with recurrent salivary calculi is presented with a short account of etiological, clinical, and pathological features of lipocalcinogranulomatosis.

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OSTEOMYELITIS OF THE LOWER JAW CAUSED AND MAINTAINED BY FUSOSPIROCHETAL INFECTION

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Osteomyelitis of the mandible is not very common. In order of frequency of involvement by osteomyelitis the lower jaw takes the eighth place. Trauma as a precipitating cause plays an important part in its production.

In the etiology of this disease all kinds of pyogenic microorganisms play a great rôle. The first place is taken by the staphylococcus pyogenes aureus, staphylococcus pyogenes albus and streptococcus pyogenes; single or together they can be found in mixed infection. Very rarely the etiologic agent may be the pneumococcus, gonococcus, *B. typhi*, *B. coli*, *B. pneumoniae*, *B. influenzae* or the ray fungus.

No report has been found mentioning fusospirochetal organisms as the causative agent.

Fracture of the lower jaw is benign, when not compound. If infection of the line of fracture does not occur, the healing is normal, provided there is no dislocation of large extent.

The line of fracture of the mandible, in the case of a compound fracture, may be infected from (1) extra-orally, the skin surface, or (2) intra-orally, the mucous membrane. As to infection of the mandible by the ray fungus (actinomyces) the portal of entrance is represented—with and without fracture—by teeth with caries through which the invasion of the fungus may occur subperiosteal as well as osteo-central. Jaehn¹, for instance, found five times out of eight cases of actinomycosis of the lower jaw, actinomyces invading into and through the dental pulp.

Fusospirochetal organisms (*B. fusiformis* plus Vincent's spirochete) can be found in the oral cavity in healthy persons even with good oral hygiene. However, upon the slightest inflammation of the mucous membrane of the oral cavity (cheek, gums) their number is increased enormously. A common example of fusospirochetal infection of the oral cavity is Plaut-Vincent angina, stomatitis ulcerosa and ulcero-mem-

branacea. They can be easily demonstrated in the different types of gingivitis.

The pathogenic rôle of fusospirochetal organisms is still questioned, due to the fact that as mentioned above they may occur in the oral cavity without causing any conspicuous morbid findings on the mucous membrane. The same is true on the other hand occasionally, of hemolytic streptococci or diphtheria bacilli. They may be present in the oral cavity without causing any pathologic change. They need, however, only some precipitating cause to unfold their terrible power.

In the case we are interested in we shall be able to illustrate thoroughly in which way fusospirochetal organisms harbored and kept in almost pure culture in the oral cavity, needed only a precipitating cause: the compound fracture of the lower jaw to unfold their pathogenic power and maintain the pathogenic process.

REPORT OF THE CASE.

Enma J., white female, 44 years old, fell down stairs and bumped her left lower jaw at the angle three weeks before her admittance, December 10, 1937. She noticed a severe toothache at that time. The swelling of the lower left cheek gradually appeared, until about a week later when it increased rapidly so that patient was almost prevented from opening the mouth. She could scarcely eat soup.

At her admittance (December 10, 1937) the toothache had been persistent. There was great swelling extending over the left side of the face and down the left anterior side of the neck, heat, redness and fluctuation. Pressure caused a discharge of foul pus into the oral cavity from two carious open teeth corresponding to the line of fracture. Besides this, the oral cavity showed many carious teeth, too.

December 11, 1937, patient was admitted to a hospital where the diagnosis was made by x-ray picture: oblique fracture of the left lower jaw near the condyloid process with osteomyelitis. Fragments were in good alignment. The treatment consisted in wiring the two bars on the left mandible, opening the abscess in the left side of the mandible and over it externally.

January 5, 1938, the patient was discharged from the hospital and was attended at home by a visiting nurse who changed the dressings three times a week. Under this conservative treatment her condition became better, the acute swelling receded, the movement of the jaws became freer, the mastication easier, January 31, 1938, she entered the Surgical Outpatient Department at Northwestern Medical School. At this time there was a diffuse swelling at the angle of the left mandible and three small draining sinuses. Here the diagnosis was made: chronic osteomyelitis involving the frac-

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1. Bolognesi e Chiurco: Le micosi chirurgiche, Siena, 1927.

ture line. In the following weeks a visiting nurse attended the patient at her home three times a week, but she did not make any further progress. She had no pain or discomfort but the left cheek was still markedly swollen. The sinuses kept on draining and producing a foul smelling thick yellow pus. Around the larger sinuses (Fig. 1) there was an area 10.5

the two lower left molars was slightly greater than normal but there was no avenue of communication *any more* between the fractured area and the inside of the mouth. *These two teeth, however, exhibited more than normal mobility, the third molar being much looser than the second.*

The following radiographs were taken: (1) a lateral



Fig. 1. Around the larger sinuses there was an area 10.5 cm. by 7.5 cm. in diameter showing swelling and a boardlike hard infiltration.



Fig. 2. Radiograph of the lateral jaw of the frac-

tured side. It shows the break completely through the body of the mandible just mesial to the left third molar. The break widens out as it approaches the lower border of the body of the bone and it was in this area that small segments of bone could be seen.

cm. by 7.5 cm. in diameter still showing swelling and a boardlike hard infiltration. Due to these circumstances the patient was transferred from the General Surgery to the Oral Surgery for further attention.

On intra-oral examination it was noted that rather

jaw film (Fig. 2), and (2) intra-oral films of the left side (Fig. 3-5). The lateral jaw film showed very definitely a fracture completely through the body of the mandible just anterior to the left third molar. The break seemed to widen out as it approached the in-



Fig. 3. This intra-oral film shows the lower left second and third molars badly broken down by decay. Absorption of the alveolar crest can be noted on the mesial and distal of the second molar; also absorption of bone in the bifurcation of the 3rd molar.

Fig. 4-5. These two films show a definite absorption of the crest of the alveolus, leading us to believe that chronic suppurative pericementitis had progressed considerably before the fracture occurred.

firm union between the two segments had taken place. There were teeth missing from both the upper and lower arches. Around most of the remaining teeth there was a low grade gingivitis which was apparently due to the accumulation of calculus and debris. The depth of the sub-gingival crevice around

ferior border of the mandible and it appeared as though these were small loose fragments of bone in this widened area. The upper portion of the break apparently involved the peridental membrane on the mesial of the mesial root of the third molar. On the small intra-oral films of the two molars we note that

the crest of the alveolar bone had been absorbed and that the bone in the bifurcation of the third molar had been destroyed. Resorption had also taken place around the second bicuspid, first bicuspid and cuspid on that side. This made it very evident that chronic suppurative pericementitis had gained a definite foothold before the fracture had occurred.

March 3rd, 1938, a rubber dam drain was placed into the sinuses to facilitate the separation of the sequestra. This treatment was repeated several times.

Since the oral surgeon suspected a ray fungus infection due to the whole course and long duration

high into the draining canals contained fusospirochetal organisms alone. (Fig. 9.)

Cultures were made only aerobically and only from the depth of the sinuses. They remained sterile, not showing any growth of the aerobic organisms, yeasts, cocci, bacilli, mycelia, found in the oral cavity.

These findings were entirely unexpected and surprising. With regard to the great chronicity as well as the board-like hard and extensive swelling, causing practically no pain or complaints any more, further with regard to the sinuses kept open spontaneously for months, discharging a thick yellowish pus we expected



Fig. 6. Photomicrograph of a smear from the left lower gingiva, showing Vincent's spirochetes plus *B. fusiformis*, cocci, bacilli, yeast and thick mycelia. Stain: carbol-fuchsin.



Fig. 7. Photomicrograph of a smear from the subgingival crevices of the 2. and 3. left lower molars. Showing almost pure culture of fusospirochetal organisms. Stain: carbol-fuchsin.

(over four months!) she was referred to the Dermatological Department for mycological and bacteriological examination.

March 17 and 19, 1938, smears were taken and cultures made on different mediums from (1) gingiva left lower jaw, (2) tooth pocket, second and third left lower molars, (3) open roots of the said molars, (4) the depth of the fistulas with opening on the skin surface. The smears were stained by carbol fuchsin and according to Gram, the cultures were made on peptone agar and 2% glucose agar.

(1) The smears from the gingiva showed Vincent's spirochetes and *B. fusiformis*, cocci and diplococci, bacilli, yeasts, and mycelia. (Fig. 6.)

(2) The sub-lingual crevices about these said molars showed a conspicuous diminution in the species present. There were fusospirochetal organisms, few cocci and mycelia. (Fig. 7.)

(3) The depth of the open roots of the molars demonstrated fusospirochetal organisms, cocci, bacilli and mycelia. (Fig. 8.)

(4) Finally the fistulas going in from the outside

to find some actinomyces. But the ray fungus could not be detected in smears nor in culture.

Due to the results of the bacteriological examination we were convinced that there was only one possible way to promote healing and recovery, i. e., the removal of the two carious roots, really the source and constant supply of infection of the lines of fracture.

The roots were extracted, followed by prompt ceasing of the discharge and healing of the fistulas.

April 2nd, 1938, patient was given an intravenous injection of .3 of neoarsphenamin in an attempt to reduce the swelling. Further treatment and observation was impossible, because the patient disappeared.

COMMENT

There are several particulars which seemed important and justified the report of this case.

The management of the fracture of the lower jaw complicated with osteomyelitis is the problem of general surgery.

What should be learned from the management

of this case, that is, the negligence of an early bacteriological and/or mycological investigation of the oral cavity and of the pus in the large abscess. The first bacteriological and mycological examination was made after four months!

Despite the fact that the patient came under medical care at the beginning of the fourth week after her accident; despite the fact of her serious condition (large swelling, abscess formation); despite the fact of observing foul, purulent discharge from the subgingival crevices of the molars involved at the line of fracture,

negligence of such an important examination as the bacteriological in any case of suppuration.

Any new era must not drift us from recognized and well proven rules of exact knowledge and the self-evident routine of bacteriologic examination. Let us not neglect the facts of today in our haste to grasp the advances leading to tomorrow.

It is well known how great a variety of microorganisms may cause osteomyelitis. It does not seem to us as irrelevant as Wielage thinks to make a thorough, clarifying bacteriological ex-



Fig. 8. Photomicrograph of a smear from the depth of the open root canal of the 2. and 3. left lower molar. Fusospirochetal organism, cocci, bacilli and mycelia. Stain: carbol-fuchsin.



Fig. 9. Photomicrograph of a smear from the depth of the fistulas. Only fusospirochetal organisms were found. Stain: carbol-fuchsin.

neither the importance nor the necessity of a bacteriological examination was taken into consideration.

In the discussion of an excellent paper on osteomyelitis of the jaws by Fred Z. Havens (J. A. D. A. 21:1215, 1934) M. F. Wielage referred to a transition period stepping from the bacteriological to the "bio-physico-chemical era." He felt it important to emphasize that we do not have to fear infection as we have in the past and that physicochemistry brings out certain data that bacteriology was unable to explain.

We advise that Wielage's suggestion be taken with a grain of salt. The shifting into a new era whatsoever does not mean neglect of positive knowledge—remember the work of Louis Pasteur and Robert Koch—and never will excuse the

amination. No matter what the "era," we shall always need to know the causative agent of a suppuration. This fact is not irrelevant neither today nor in the future.

In any case of an infected compound fracture the exact surgical management of the condition is only one important moment. Next to it the question has to be raised, which type of microorganism is the invader, engendering and/or supporting the infectious process.

We are convinced on the ground of the bacteriological investigation that the osteomyelitis was caused and the suppuration with its foul purulent discharge was supported for months by fusospirochetal organisms. This fact as well as the addition of a new causative agent of osteomyelitis justifies our report. We feel obliged to

emphasize the importance of bacteriological examination of any infection. This necessity seems not to be recognized by some, much to the detriment of the patients.

In that case there was no sequestra to be formed. As long as the teeth (2. and 3. left lower molars) were kept in the mouth the Vincent's infection would thrive and would never allow complete healing to take place. We do recognize the fact that the third molar was kept in the mouth to keep the posterior segment in its proper position, but it could and should have been removed just as soon as there was firm enough union to allow such a procedure.

SUMMARY

Report of a case of a traumatic compound fracture of the left lower jaw followed by osteomyelitis in the line of fracture.

The bacteriological examination yielded fusospirochetel organisms as the causative and maintaining agent, never reported before in osteomyelitis.

After removal of the second and third left lower molars which supported the fusospirochetel suppuration complete healing resulted.

The importance of the bacteriological examination in osteomyelitis as well as in any other suppuration is brought out and emphasized.

PRESIDENT'S ADDRESS SOUTHERN ILLINOIS MEDICAL SOCIETY, 1937

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The transition of medicine is not new as many people think, including a great number of doctors. Few have given any study to the various changes that have taken place in the practice of medicine. I think, therefore, it would be well to review some of the changes that have led to the ideas of health insurance, not taking into consideration the European countries where state medicine is practiced.

There has been a slow but sure social reformation taking place in this country since its inception. For instance, the nationalization of the Postal Service, Education (Schools), Highways, Hospitalization of the Insane, Public Health Service and Veterans' Hospitals. These seem to be operating in a way satisfactory to the public and as time passes on there will be other pub-

lic services that will come under Federal or State control of operation. The mention of this is just a reminder of what has gone before, that we may anticipate the future.

A great deal of criticism of the Medical Profession is being publicized. The doctors have a bad case of jitters and the mention of insurance, hospital or health budgeting, brings on a case of "State Medicine Hysteria."

A few years ago, the Profession was complaining bitterly and passing resolutions pertaining to ethics of contract practice, which began in the lumber, railroad and mining camps in districts without physicians.

The experience of corporations where employees were under medical supervision was such, that other corporations with a large personnel found it profitable to have medical supervision in their plants and stores. They contracted with physicians for this care, some full-time and some part-time. In the beginning, it covered employment connected injuries only, then illness or injuries from any source and finally included medical care of all types for the entire family. To take care of this hospital and medical expense, a small assessment was levied on employees by the company. When their neighbors heard about this medical service, they in turn formed organizations and hired or contracted for physicians. Universities and colleges, observing what success the large corporations were having, put in a health service for their students, hiring contracting physicians.

The American Farm Bureau Federation, with a membership of one and one-half million has asked the American Medical Association to assist them in formulating some definite plans that will give their members adequate medical and hospital care, on a cooperative basis, at a reasonable cost. The only solution offered was a recommendation that county medical societies should cooperate closely with their local farm organizations. However, if a County Society enters into a contract for cooperative services without the endorsement of the State and National organizations there would probably be criticism of its membership. If the Medical Association does not take cognizance of the requests of the Farm Organization, I am afraid they will enter into a contract with groups outside of the Medical Organization, which will

prove unsatisfactory to both organizations. My suggestion is that these groups, the farmers and the doctors, get together and form their organization for the best of all concerned.

The public seems to be group medicine service conscious, not only those who had employee service, but that great number who came out of our colleges and universities, who have had College Health Service, and they seem to like it. Not having a free choice of physician does not seem to make any difference to them. As I said before, organized medicine has passed a great number of resolutions pertaining to contract practice with little avail. They still refer to it in their economics and ethics, but have accepted it under the name of "industrial medicine."

The American College of Surgeons has established an industrial standardization for first aid and care and accident prevention with medical supervision for industrial plants. A great number of our leaders in organized medicine, if they were designated, as in former years, "contract surgeons," the question of ethics would be very grave. Among this group you will find a great number holding the key offices of organized medicine.

The reason this thought is advanced is to show that the men who are responsible for the trend of events, that is bringing the insurance idea to the public, are the ones who are showing the greatest opposition to health and hospital insurance. Then, there are those who are so politically intolerant that any idea, which is advanced by the administration, would not be accepted. They have forgotten that the first survey on the cost of medical care had its inception under the previous administration and was sponsored by Dr. Lyman Wilbur, who was a cabinet officer and a past president of the American Medical Association.

The program that is to be offered should be acceptable to all groups of organized medicine. The group health insurance and individual insurance can be satisfactorily taken care of by using the plan adopted by the St. Louis Group Hospital Service, Incorporated, which is accepted and sponsored by the St. Louis Medical Society.

The outstanding cause for criticism of the European system is that the rate of insurance is so low, and the cost of clerical overhead so high,

that when the cost of medical care is figured, there is so little left for the case treatment, that the doctor in charge must do a volume of work in order to give him sufficient income to maintain his standard of living. It is, therefore, impossible to give the required time to each patient for proper examination and treatment for the best medical care. As a result, medical statistical reports are better in America than abroad.

A flexible national fee bill should be established that will compensate the physician sufficiently and at the same time see only a limited number of patients. The rate of insurance will be governed accordingly.

The set-up should be sponsored by the City or County Medical Society and controlled by them and only members in good standing eligible to participate in the insurance fees; all participants being governed by the By-Laws and Code of Ethics of the Medical Society and rules set down by the insurance governing body. Anyone found guilty of violating same will be suspended from the Medical Society thereby losing his privilege of treating the insured, and the insured who is a malingerer will be dropped from the insurance rolls and not allowed to participate again.

STUDIES IN AUTOHEMOTHERAPY II

A New Method of Treating Hyperemesis Gravidarum

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The treatment of hyperemesis gravidarum has always been a problem. It is true that many women are afflicted with what is commonly called "morning sickness," especially in the first trimester of pregnancy, a condition which in the majority of cases subsides without any special treatment. This is a far cry from the grave condition of hyperemesis gravidarum, where the inability to partake of food, the progressive loss of weight, and the resulting severe toxemia may lead to a miscarriage or even to the death of the pregnant woman. But there are no hard and fast lines to separate the mild case from the graver one, and it is, therefore, of great importance to arrive at a method of effectively combating the toxic condition from the start. While much progress has been made in the methods of delivering the baby, there is a woeful lack in

therapeutic management of the toxemias during pregnancy. Before we give an account of our new method and the results we have achieved, we wish to briefly summarize some of the procedures found in the literature.

Dalsace¹ recommends his catharsis method, which consists in administering a dose of calomel at night, followed by saline in the morning; he advocates a liquid diet with emphasis on barley water and fruit juices. This treatment has given results only in mild cases.

Calkin² suggests that mild cases be hospitalized, giving cleansing enemata and retention enemata every six hours, the retention enemata containing 15 gr. of sodium bromide in two to three ounces of water; he supplements this with a high carbohydrate diet. In severe cases he recommends the use of 60 gr. of sodium bromide in two to three ounces of water. The results have not been corroborated by others.

DeLee³ believes in isolating the patient from all disturbances and distracting her mind from her condition. He offers no specific treatment and advocates, in very severe cases, therapeutic abortion, as do we all.

Hirst⁴ advances certain evidence that the use of serum of a woman spontaneously recovered from toxemia of pregnancy contains an antibody that may prove of value in treatment. Obviously there are technical difficulties in using this method.

Allen⁵ advocates the Thalhimer method⁶ of administering glucose plus insulin, using 30 U-letin for 1000 cc. of ten per cent glucose, but he does not believe that this therapeutic plan will cure any cases of pernicious vomiting.

Titus⁷ and Dodds⁸, working in collaboration, emphasize the need for careful laboratory control of the blood chemistry of such patients. Thalhimer's method is tedious, dangerous and infrequently successful; it is also expensive to the patient.

LeFevre⁹ also uses insulin, and has found it invaluable, where acidosis is present. He states that in pernicious vomiting the use of calcium chloride, corpus luteum, glucose, husband's blood (sic!), sodium bicarbonate and many other drugs have given only moderately successful results.

Levy-Salal¹⁰ believes in the effect of non-specific protein, using the peptone of Witte. Eight patients were successfully treated.

Gammeltoft¹¹ thinks that it is a self-limited disease, which can be helped by "inverted ventral posture."

Jones¹² has used electro-therapy to relieve the irritation to the pneumogastric nerve. The author reports several cases, in which his treatment has proved valuable as an adjunct.

Carter¹³ employs 5 gr. tablets of ovarian extract every three hours, and in severe cases 1 cc. ovarian extract hypodermically.

Davis¹⁴ uses small doses of thyroid, 1 gr. t.i.d.

After reviewing all these methods of therapy, we feel that none of them has been uniformly successful. We know, as Gammeltoft emphasizes, that many of the toxemias are self-limited, but there is no way of knowing which case will be of this type or, rather, later on lead to a real grave toxemia threatening the life of the patient. We believe that we have found a method that is applicable to all types of toxemias, even to beginning eclampsia, a method which is practical, safe, economical and available at the home as well as in the hospital.

One of us has discussed the mechanism of autohemotherapy in a previous article¹⁵. In brief, the method consists in withdrawing 3 to 10 cc. of blood from the vein and re-injecting it intramuscularly, quickly, before it coagulates. The most logical explanation for the undoubted effect of autohemotherapy is the theory of Vorschutz; he has shown that after removal of blood from the vein, there appear in it certain substances that are able to stimulate the sympathetic nervous system. It has further been shown that autohemotherapy increases the bactericidal power of the blood plasma. Similar effects may be observed in using foreign protein therapy, but there is a vast difference in the manner of absorption; the blood after being injected, is absorbed very rapidly, practically within an hour, which is much more quickly than with the foreign protein.

We assume that in toxemias of pregnancy a certain toxin is elaborated and absorbed in the blood stream of the pregnant woman. The effect of these small amounts of blood injected into the tissues is in the nature of a desensitising process; we, therefore, get similar results in other allergic conditions such as urticaria and asthma. Future investigators will form more definite conclusions as to the rationale of autohemotherapy; in the following case reports we

will endeavor to show that our results so far have been gratifying, and we hope that others will follow us in our attempt to control these potentially grave conditions.

It is clear that it is a far cry from the mild degree of emesis which is almost physiological in the first trimester, to a serious condition which arises in the later stages of pregnancy, in the second and third trimesters where danger of miscarriage is often imminent. We, therefore, will give examples of cases which we have successfully treated with this simple method, covering the first, second and third trimesters.

Case 1. Mrs. P. S., primipara, age 19, with negative physical findings, blood pressure 110/80, urine negative, weight 146 lbs., was first seen on December 7, 1937; last period was on 11/20/37; her estimated date of delivery was on 8/27/38. She states that she had been ill for eight days, suffering from nausea and frequent vomiting from the time she arose until late afternoon, when these symptoms wore off. She was unable to eat until supper time, and then only a high carbohydrate diet.

12/7 she was given 3 cc. of her own blood. Complete relief in three days.

12/9 3 cc. of blood. No vomiting after these treatments for 3 days.

12/11 nausea—3 cc. of blood.

Since then she has been completely free of distress. She was delivered of a healthy baby on 9/1, being absolutely well the last six months of her pregnancy.

Case 2. Mrs. R. W., primipara, age 27, blood pressure 115/70; physical findings negative, urine negative, weight 129½ lbs. First seen on 8/1/37; last period 7/23/37; estimated date of delivery 4/30/38.

In October she was frequently nauseated and vomited, and received 3 injections of autohemotherapy (3 cc. each) which controlled these symptoms. October 3 she was given 2 cc. She was well until February 25, when she came in complaining of nausea and swelling of hands and feet.

On March 3, she was given 5 cc. of blood and within one hour after the injection she began to feel better. Her weight had dropped from 140 to 130 lbs. On March 6 she was given another dose of 5 cc., and the swelling of her extremities had abated. Her appetite improved and her weight went up again; her blood pressure, which was 110/115, had gone up to 132 systolic. She was given 5 cc. on the 10th day and on April 30th she went into the hospital on our advice, where a bag was introduced and she was delivered of a healthy baby on 9 A. M., on the 1st of May, 1938. This patient showed marked hyperemesis, and definite signs of toxemia, evidenced by the swelling of the extremities, rising blood pressure, loss of weight. We believe the autohemotherapy checked these symptoms and prevented eclampsia, so that at the estimated time of delivery induction led to a successful termination.

Case 3. Mrs. H. D., para two, age 32, was first

examined on 10/5/37; her last period was 2/12/37 and her estimated date of delivery 11/19/37; blood pressure 130/85; urine negative, weight 180 lbs. The previous delivery was in 1926, and she stated that she had been nauseated during the early months, and no treatment gave her any relief, but her symptoms stopped the end of the third month. The vomiting in these patients usually recurs with every pregnancy.

She complained of nausea and diarrhea and first refused autohemic treatment; was therefore put on a high carbohydrate diet and one quarter gr. luminal, from which she received no relief.

On 10/12 she received 3 cc. of blood.

On 10/14 and on 10/22 she received the second and third injections, and she was well until her delivery 11/19/37.

This is an example of the control of toxic symptoms in the last trimester, of which we have had many successful cases.

Case 4. Mrs. S. C. Italian, age 34, para six, she had one baby 8 years ago, 1929, another one in 1931, and another in 1934. These three were normal deliveries with the babies living and well. Since then, she has had two miscarriages; one at two months and the other at three months; in both cases she was nauseated continuously, vomited and finally miscarried. The Kahn test is negative.

She had been on a diet and been given drugs in her previous cases, which were treated elsewhere. In this present pregnancy, she was again put on a high C.H. diet, low fats, and also the usual dry diets, such as crackers, nuts, dry pop corn, celery, also corpus luteum, with no good results. Then she was given autohemotherapy, 10 cc., at weekly intervals.

When she received the injections, she began to feel better within the hour. This held her for about five or six days, when the feeling of nausea returned. In all, she received ten injections, after which she was completely relieved. She carried through the term, delivering on April 27, 1938, a girl weighing 7½ lbs.

This case is interesting, and shows that this woman, who had miscarried in her last two pregnancies, and probably would have again, with the usual procedure, was completely relieved by our method, and delivered a healthy baby at the estimated date of delivery.

We could cite many more cases, ranging throughout the whole terms of pregnancy, showing that our method not only relieves the mild cases of emesis, but will also carry through the severe, toxic ones, which are threatened with eclampsia. We believe that our results justify the assumption that hyperemesis gravidarum can be explained on an allergic basis, and that autohemotherapy is the method of choice in its control.

CONCLUSIONS

1. A new and simple method is advocated for the relief of hyperemesis gravidarum, which is

based on an allergic concept of the condition—autohemotherapy.

2. The dosage employed ranges from 3 cc. to 10 cc., depending on the severity of the symptoms. The intervals between treatments should be chosen according to the effect of the treatment and to the progress of desensitisation in each individual case.

3. Only four cases have been quoted to show the effect of this method, one being a pre-eclamptic, and another a patient with a history of two miscarriages. Both responded well to this simple method.

4. The authors have used autohemotherapy in about seventy-five cases of hyperemesis, and have yet failed to see a case that did not respond. We are anxious to have the opinion of the profession on this new procedure.

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SOME PRESENT-DAY ASPECTS OF TREATMENT OF THE PSYCHOSES

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The present-day methods of treatment in psychiatry, as in any other branch of medicine, are best understood and appreciated if one views them in relationship to the methods from which they have evolved. The evolution in this particular field has been exceptionally rapid in recent years, so that modern therapeutics in psychiatry stands in sharp contrast to that which was in practice a decade ago. Before rational methods of treating mental disorder could develop it was necessary that strong superstitions

and prejudices be overcome, and this involved a struggle which has persisted for generations and which, in fact, is still by no means completely successful. Within the last 30 or 40 years, however, the emphasis upon scientific methods in all branches of medicine has been recognized as applicable also to psychiatry.

It is easy to understand why this has been the last of the medical specialties to apply these methods. Disorders involving bizarre and often apparently inexplicable changes in personality have been naturally enough interpreted not as forms of illness, but rather as aberrations of behavior on a moral or religious basis. The theory of mental disorder as due to demoniacal possession is still frank among primitive peoples, and its influence persists in the attitude of shame which is commonly observed even among progressive groups. Treatments of early days were all in keeping with this theory. Among the Egyptians and early Greeks incantations and other magic rites were attempted. If these were unsuccessful, it was assumed that the gods did not choose to remove the patient's curse, and he was therefore allowed to perish. For a brief time in Greece, Hippocrates and his followers brought forth a more rational hypothesis, recognizing these disorders as diseases and their organ of involvement as the brain. Unfortunately, this little ray of light was completely submerged in the darkness of the Middle Ages, and for many centuries the so-called lunatic was regarded as one possessed by the devil. Writings of the tenth century refer to him as the fiend-sick man and recommend the whip as treatment. Records of the fourteenth century describe the violently insane as manacled in dungeons, the milder cases as wandering uncared for and unwanted over the country. The inhumanity of treatment of these wretched individuals probably reached its climax during the witch-hunting furors of the seventeenth century, but the policy of persecution, torture and incarceration continued in full force to the beginning of the nineteenth century and persisted to a large degree for many years thereafter.

In the early part of the nineteenth century a movement arose, led in this country by Rush, in France by Pinel, and in England by Tuke, having as its object a more humane attitude toward mentally ill patients. These reformers

stressed the fallacy of the previous harshness and substituted what they called "moral treatment" with emphasis upon kindness and a pleasant environment. The regime, however, included little or nothing in the way of medical studies and, unfortunately, was applied only to a favored few. One result of the movement was a trend toward better custodial care for the insane. This was accomplished slowly and during a large part of the nineteenth century mental patients were dumped with paupers into the almshouses or sold at auction into a form of slavery. About the middle of the nineteenth century for the first time a persistent trend toward a more medical attitude came into evidence. Griesinger, in Germany, published a book, "The Pathology and Therapy of Mental Diseases," the influence of which finally led to the discard of the theory of insanity as sin. At the same time an association known as the Association of Medical Superintendents of America was formed. The object of the group was primarily better institutional care for the mentally ill. In 1867 the first systematic course of study of psychiatry in this country was introduced in the Bellevue Hospital, and in 1870 into Jefferson Medical School. Aside from those two instances, the subject was scarcely mentioned in any medical curriculum until Adolf Meyer in 1902 became director of the Pathological Institute of the New York State Hospital and began an organized program of psychiatric research and teaching based upon clinical observation. Meanwhile, in 1896 Kraepelin had published his text book of psychiatry in which the mental disorders were classified as disease entities with emphasis upon course and outcome.

During the present century progress toward the understanding and rational treatment of the psychoses has been dramatically rapid. This progress is the result of several scientific and sociologic tendencies which became manifest about the beginning of the century. These tendencies as applied to mental disorder fall into three groups of activity: first, prophylaxis; second, interest in the psychological meaning of the morbid symptoms; and third, interest in the organic bases of the disorders. The activities directed toward prophylaxis include the Mental Hygiene Movement, the establishment of child-guidance clinics, and the development of psychi-

atric social service. In the second group is the psychoanalytic movement and its branches. In the third group are the numerous and rapidly increasing research studies of the constitution, of the close relationship between mental disturbance and vegetative activity, neuropathology, electro-encephalography and pharmacologic treatment.

The one man in this country who has undoubtedly done most to further the development of all these activities and to coordinate them toward more efficient treatment of mental disease is Adolf Meyer, known as "The Dean of American Psychiatry." Meyer stresses particularly the pluralistic attitude toward the psychoses. He states, "We consider it obligatory in the study of the reactions of man, not only to test the pupillary and patellar reflexes but also a few essential reactions to life's problems: the essential ways of using and adapting one's self." At another time he says, "Modern psychiatry is built upon the principle of the biological concept of man: one unit, studied in many aspects. The first requisite is clinical observation. We need intensive study of the family and environment as well as of the organism."

Let us analyze in more detail the application of these various movements, which Meyer terms the "many aspects" of study, to the present-day treatment of the psychoses. The Mental Hygiene Movement has been useful to prepare the way for a consideration of possibilities of treatment. As long as mental disorder is regarded as an ethical problem with the consequent attitude of shame, disinterest, or flippancy, any program of therapy will meet with difficulty in application. The object of the Mental Hygiene Society, which was started by Clifford Beers in 1908, is to overcome this ethical attitude and to replace it by a more general realization of the factors involved in the development of mental disorder. Emphasis is particularly given to prophylactic treatment. The growth of the child behavior clinics has been in close relationship with the movement. These clinics have arisen in response to the developing conviction that many serious emotional problems have their beginnings in childhood and may best be studied and treated before they have become chronic. In handling these problems it is again necessary to use the pluralistic method which implies careful consideration of the physique, intellect and

emotional tendencies of the child and his relationships in his family and general social situation. These clinics correlate the work of the general physician, psychologist, psychiatrist, social worker and sociologist in the treatment of personality disorders in their formative stages. The third prophylactic organization: that of psychiatric social work, had its beginnings when Mrs. Adolf Meyer in 1902 began a study of mental patients in their homes. This led to the appointment in Meyer's Clinic of the first psychiatric social worker in 1907. Since about 1918 courses in psychiatric social work have been introduced into all of the large schools of social service administration. The trained worker plays an important part in preventing serious mental difficulties by assisting in the adjustments between individuals and their environments, and also in the rehabilitation and social reorientation of those who have recovered from mental illness.

We may consider next the second large movement: that directed toward an understanding of the psychological meaning of the symptoms of mental disorder and leading to psychological treatment. This interest has its beginning in the work of Janet and Charcot in the latter part of the nineteenth century. In their experiments with hypnosis they found evidence of a rationale in the otherwise incomprehensible symptoms of hysterical patients. They proved that body symptoms could be caused or at least precipitated by psychological mechanisms and could be cured in the same way. At about the same time Breuer worked out the method which he called catharsis of relieving symptoms by bringing back to the patient's conscious memory—using hypnosis—the painful early experiences which were etiology to the disturbed behavior. Sigmund Freud, who studied with Charcot and later worked with Breuer, became greatly interested in this concept of the power of unconscious processes. He was dissatisfied with hypnosis as a method of exploration and developed the method known as free association. To Freud is given credit for originating the psychoanalytic school which at present comprises a large branch of psychiatric practice in this country. Since its usefulness in therapy is largely restricted to the psychoneuroses, its methods will not be discussed in detail in this paper. It is obvious, however, that psychoanalysis by directing interest to uncon-

scious bases of behavior can make a large contribution both to the prevention of serious disorders and to a better understanding of the mechanisms involved.

The third trend in modern psychiatry: that toward study of the physiological pathology of the psychoses, is still in a very chaotic state. One fact which makes a well-organized investigation difficult in this field is the impossibility of animal experimentation. Animals do not develop morbid symptoms which we can call psychoses. Investigators, therefore, must rely upon clinical observations which under the circumstances are difficult to standardize. It is noticeable, however, that recently the various fields of research are converging toward a more unitary concept: a concept expressed by the physiologist, Cannon, of Harvard in the term homeostasis. This idea of a "steady state" toward which all functions of the organism contribute leads to a different idea of mental disorder from that previously held. It tends to break down the isolation of these disorders from other medical conditions. In other words, as we come to emphasize the integration of the functions of the human organism we realize that a disturbance in any one function, whether this be expressed in the form of an irregular heart beat or of an exaggerated emotional state, is indicative of a disequilibrium which must affect, to some degree, every other function of the organism. On the basis of this concept we now attempt to bring together the results of all the various research studies relating to the psychoses and to construct from them a characteristic picture. We can then proceed with some degree of rationality to map out a plan of treatment. We can at the same time proceed from another direction. We can study the effects of various medications upon the clinical picture and thereby draw conclusions about the processes which are being modified. This is at present being done in relationship to the new pharmacologic treatments of the psychoses.

Up to ten or fifteen years ago there were no effective medical treatments for the psychoses, other than fever treatment of general paresis. As has been mentioned, interest was directed toward prophylaxis and toward readjustment after recovery. During the actual psychotic episode only such measures as sedation, nursing care, and well-organized routine activities were

used. Wagner Jauregg introduced malarial treatment of general paresis into clinical practice in 1917, with remarkable results. Following this, many attempts were made to treat other forms of psychoses with pyrexia, but with little success, although this method is still used in some cases as supplementary to other treatments.

The next systematic attempts at therapy were by narcosis. It had long been observed that large doses of certain sedative drugs were capable of bringing about temporary improvement in psychotic patients. It was assumed that this improvement was the result of "rest to the inflamed organ"—the brain. In 1922 Kläsi of Zurich made the first report of systematic studies in sleep therapy. The drug used was *somnifen*, a barbituric derivative. Kläsi emphasized not so much the element of rest, but rather the better rapport which could be established with the patient during the twilight phase of the narcosis. Patients who had seemed entirely out of contact, mute and apathetic, under the influence of the drug were temporarily roused to enter into conversation and sometimes to accept suggestions. Following this report appeared many others, mostly by German physicians, using *somnifen*. The treatment became known as *Dauerschlaf*. In this country various drugs have been tried. In 1929, Bleckwenn at the University of Wisconsin first introduced sodium amytal as the *Dauerschlaf* agent, and since then this has come into general favor. The question of whether the improvement is due to the psychotherapy in the twilight phase or to more purely physiologic aspects of the treatment seems to be answered by clinical observations in favor of the latter assumption. In the clinics where the drug is given without attempts at establishing rapport, the recoveries reported seem equal to those where psychotherapy is attempted. The use of a modified treatment of this kind for psychoneurotic patients has, however, occasionally been valuable in facilitating psychotherapy.

From early times it has been occasionally observed that patients could be "shocked into sanity." Isolated reports have been made of recoveries after sudden threats to life, such as near-drowning. The present methods, however, have not grown out of these observations but have been built up independently.

There are two types of "shock" treatment in

general use at present: that produced by insulin and that produced by metrazol. It is interesting that the two methods, though based upon entirely different observations and worked out in different clinics, were both presented in short succession. Sakel of Vienna introduced the insulin hypoglycemic shock technique into psychiatric practice with an article published in November, 1933. Since 1930 he had been treating morphine addicts with insulin and had observed that when he accidentally secured severe reactions, the patient's "state of mind" became subsequently much improved. These patients became more cheerful and placid than those who had not been subjected to shock doses of the drug. On the basis of these observations Sakel conceived the idea that the treatment might likewise benefit patients with other types of mental disturbance, and he proceeded to try it out on schizophrenic patients. His results were most encouraging. Since its introduction by Sakel, insulin shock therapy has been widely used both in Europe and in the United States, with excellent results.

Within a year after Sakel's first article, Meduna of Budapest began to publish reports of his use of induced convulsions in the treatment of schizophrenia. At first he used camphor-in-oil to induce convulsions but later found metrazol (cardiozol) to be more effective. Meduna was led to make these attempts at therapy following the observation that schizophrenic patients rarely were epileptic. This observation led him to assume a possible antagonism between convulsive states and schizophrenia. Metrazol, originally used intramuscularly as a heart stimulant, has been found to be effective intravenously as a convulsant, and as far as has been determined, to be free from injurious side effects. Since both types of shock therapy are new, they will undoubtedly undergo modifications of technique. Already numerous other methods of producing shock states are being tried out, some of which may later supplant the original methods.

The mortality rate associated with either of these forms of shock therapy is extremely low. Only four deaths in more than one thousand reported cases have occurred during metrazol treatment. Insulin is slightly more dangerous because of the possibility of such complications as pneumonia during the longer periods of treatment. The mortality of *Dauerschlaf* treatment

is definitely higher though no comparative statistics are available.

At the University of Illinois' Psychiatric Institute, where these newer treatments have been given systematically for about two years, some interesting comparisons of recovery rates of treated and untreated patients have been made. In general, these studies indicate that during the years before the introduction of shock therapy, when only Dauerschlaf and fever were used, about 13% of schizophrenic patients and about 60% of manic-depressive patients recovered. Since the shock methods have been added, the recovery rate in the schizophrenic group has increased to about 40%. The effect in the manic-depressive group has been to greatly shorten the episodes, but not to prevent recurrence. So far there have been relatively few recurrences of treated recovered schizophrenic patients.

Although these increased recovery rates are gratifying, it is important to avoid premature enthusiasm. Very few cases have been followed for longer than a year after treatment. It is quite likely that the value of these pharmacologic treatments for direct therapy is less important than their value in contributing to the understanding of the pathology of mental disorders. Careful studies of the patients' physiologic and psychologic states before and after treatment, as well as their reactions during treatment, are giving many suggestions as to the morbid processes involved.

It should also be emphasized that the use of pharmacologic treatment, however effective, does not obviate the necessity for the other types of therapy outlined: prophylactic and psychologic. Mental disorder obviously involves so many factors that no one simple procedure can be a cure-all. The pluralistic approach is still necessary.

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DIABETES AND CORONARY DISEASE

Diabetics have advanced coronary disease, especially occlusion, earlier and more frequently than non-diabetics.

The incidence of these changes increases rapidly with duration of diabetes.

Diabetic women have well-marked coronary sclerosis nearly as early and as often as men. Among non-diabetics under age 60, many more men show such changes.—Metropolitan Life Ins. Co.

NECROBIOSIS LIPOIDICA DIABETICORUM

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The dermatologic literature of recent years has contained several reports of necrobiosis lipoidica diabeticorum, an unusual manifestation in the skin of a lipid disease. The clinical features of the disease are distinctive; and the histological picture is rather sharp. When fully developed the cutaneous lesions usually occur on the lower extremities and consist of flat oval shaped infiltrated plaques, the surface of which is smooth, shiny, slightly depressed, and covered with tiny telangiectases. The central portion is colored yellowish and the border violaceous. The histological picture is one of necrobiotic areas in the cutis, perivascular lymphocytic infiltration, extra cellular lipid deposits, and sometimes there are giant cells present. The presence of sudanophilic droplets between the collagen fibers is pathognomonic of the disease.

The condition is little known to the profession at large, and while an increasing number of cases are being recorded in the American literature, its occurrence is sufficiently rare to warrant the report of the following two cases.

Case 1. Mrs. M. V., aged 33, presented a lesion on the outer surface of the right thigh. This lesion appeared after an injury four years ago, and began as a tiny red area which had gradually spread peripherally, to develop into a sharply outlined infiltrated plaque the size of a nickle. The central area had a yellowish waxy appearance, the border violaceous. The surface was smooth, shiny, and was atrophic and covered with numerous fine vessels. There were no subjective symptoms.

There was a history of diabetes mellitus of two years' duration, but symptoms suggestive of the disease had been present for about 20 years. The diabetes has never been under complete control. A general physical examination revealed no abnormalities. The basal metabolic rate was +2, the sugar content of the blood was 190 mg., the cholesterol content 342 mg., and the total fatty acids 929 mg. per 100 c.c.

Histologic examination of the biopsy specimen (Dr. Caro) showed the walls of the blood vessels in the corium to be thickened, even to the point of occlusion. About these vessels there were mantles of infiltration composed largely of lymphocytes and histiocytes. Deep in the corium were large areas of necrobiosis in which the collagen fibers were pale, thickened and wavy and took the stain poorly. In these areas the elastic fibers

were missing. The Sudan 111 stain showed many small droplets of fat within the cells of the infiltrate.

Case 2. L. J., a man aged 28, has had diabetes for 14 years. He presented three cutaneous lesions, one on the right shin, another on the left calf, and the third on the right large toe. The oldest lesion which first appeared about seven years ago was irregularly oval, about 3x3 inches (5 by 7.5 cm.) and was sharply defined. It had a glazed surface, mottled yellowish in the center with a darker reddish brown edge. The surface was scaly and slightly depressed in the center. Its appearance was typically that of necrobiosis lipoidica diabetorum. The oval lesion on the shin which had followed an injury, was poorly defined, reddish, raised, firm and indurated. This lesion did not have a yellowish center or pigmented border. The lesion about the toe-nail followed upon a paronychia. It was red, fairly well defined, and indurated, not unlike a patch of scleroderma. There were no subjective symptoms in any of the lesions. The general appearance of the lesions was such that they had always been considered by physicians to be bruises which failed to heal properly because of the patient's diabetes. The general physical examination was otherwise negative. The chemical analysis of the blood showed a sugar content of 79.6 mg. per 100 c.c. of blood, and the cholesterol 155.4 mg. Unavoidably the tests were made after the patient had taken insulin.

Histologic examination of the lesion on the leg (Dr. Caro) showed a slight cellular infiltration about the blood vessels in the corium. In several places there was slight necrobiosis, and in these areas staining with sudan 111 showed small droplets of fat within and between the swollen fibers. The lesion of the toe showed a thickened epidermis and scale with inflammatory changes in the epidermis and the corium which were not characteristic of necrobiosis lipoidica diabetorum.

Necrobiosis lipoidica diabetorum was first discussed by Oppenheimer in 1929, and in this country was first recognized by Zeisler and Caro,¹ who gave a very detailed report of two cases. As the name implies, it occurs in persons with diabetes; in fact, in one case the cutaneous lesions led to the discovery of diabetes in the patient. However, Goldsmith has described similar lesions in a non-diabetic and Bruce Jones,³ has reported a case in a woman with a tuberculous background in which the lesions clinically resembled morphea; and the microscopic picture was an indeterminate one suggestive of necrobiosis lipoidica. More recently two additional cases⁴ have been observed in non-diabetics, but aside from these few instances, the presence of diabetes has been determined in every case. The lesions are generally thought to be localized cutaneous manifestations of a generalized lipoidosis. Trauma plays an important part in their development and in the pathogenesis, according to Urbach, in

that there is a disturbance of cutaneous blood vessels (due to diabetes) plus imbibition of lipoids (secondary to disturbed lipid metabolism) in the damaged tissues. Michaelson and Laymon⁵ suggest that necrobiosis lipoidica diabetorum is closely related to diabetic gangrene on account of the underlying vascular disturbance, but then the condition occurs predominantly in girls and young women in whom one does not expect vascular involvement. Besides, there are the cases reported in non-diabetics.

The microscopic picture, too, while fairly sharp is not unfailingly so. Indeed the lesions are more typical clinically than histologically. It is occasionally difficult to differentiate the microscopic picture of necrobiosis lipoidica diabetorum from xanthoma; and sometimes similar histologic changes occur around leg ulcers and carbuncles in non-diabetics. In Bernstein's case there was a histological resemblance to granuloma annulare; but microchemical findings differed. But, when sudanophilic droplets are found between the collagen fibers, their presence is considered to be pathognomonic. The identity of this deposited lipid has not been determined. It is thought to be a neutral or isotropic fat.

The chemical studies of the blood in cases of necrobiosis lipoidica diabetorum usually show an elevation of all lipid levels; the findings with respect to total lipid and total cholesterol content are not unlike those in xanthoma. The study of Usher and Robinowitch,⁶ however, indicates that in necrobiosis lipoidica diabetorum there is a higher percentage of free cholesterol and of phospholipoids whereas in xanthoma there is a greater relative amount of cholesterol esters. The authors suggest, regarding these, that the observations may not be characteristic of the disease, but may be related to the stage of the lesion and the metabolism of the patient in general.

The treatment for the condition has on the whole been rather disappointing. Some improvement has been noted from the use of insulin injected into the lesions and general diabetic management, but only after it has been carried on for a long time.

The diagnosis of necrobiosis lipoidica diabetorum should be considered whenever one encounters in a diabetic, discolored lesions which are oval, flat or slightly depressed, with varying

shades of yellow in the center and with a violaceous border. The plaques feel cartilaginous; the surface is smooth and shiny and is traversed by tiny telangiectases. The lesions are usually few in number and occur most often below the knees. They are without subjective symptoms. Of the cases recorded to date most have occurred in young women. The lesions must be differentiated from those of morphea, sarcoid, erythema induratum, localized amyloidosis and xanthoma.

SUMMARY

Two cases are added to the steadily increasing number of recorded cases of necrobiosis lipoidica diabetorum, a relatively rare cutaneous manifestation of disturbed lipid metabolism. The condition is seen usually associated with diabetes and is manifested by firm cartilaginous plaques of distinctive color, with a histologic picture essentially of areas of necrobiosis in the corium, perivascular infiltration and lipid deposits. The pertinent literature is cited.

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SOME FUNDAMENTAL CONSIDERATIONS IN THE PSYCHONEUROSES

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No branch of medical practice is immune from the patient who is generally designated as a "neuro;" for many physicians such patients are sufficiently numerous to constitute a major diagnostic and therapeutic problem. The same diagnostic acumen and rational therapy is required in dealing with psychoneurotic patients as is afforded to persons with other diseases.

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Unfortunately, however, these desirable traits of medical practice are often poorly applied to persons with a psychoneurosis. It is therefore deemed advisable to call attention to certain facts and theories relating to these patients which may be of assistance in dealing with them.

First, a few words on nomenclature are apropos. The term "neuro" it appears, is used indiscriminately for both "psychoneurotic" and "psychoneurosis." Such usage is to be deprecated because of its ambiguity. "Psychoneurotic" or simply "neurotic" is an adjective which describes a personality makeup or a group of character traits. "Psychoneurosis" or "neurosis" is a noun; it is a disorder which may occur in any person but is particularly prone to occur in persons with a neurotic personality. A neurotic individual on the other hand, need not have a psychoneurosis. Many authors are of the opinion that there are various kinds of psychoneuroses to which such names as psychasthenia, neurasthenia, hysteria, obsessional neurosis, compulsive neurosis, anxiety neurosis, compensation or traumatic neurosis, conversion hysteria, etc., are applied. To differentiate between these various subdivisions is of secondary importance because they have many symptoms in common and they share a common etiology. In the present discussion it is proposed to consider all types of psychoneuroses together and to point out where indicated the basis for recognizing a few of the various sub-types mentioned above.

Psychoneuroses are encountered most frequently in adult life. They are not commonly found in children and adolescents. Men and women are affected with almost equal frequency. The incidence of psychoneuroses is probably related to the complexity of civilization since it is greater in urban than in rural centers and in civilized states than among primitive peoples.¹

Three primary etiologic factors should be considered in persons with a psychoneurosis. The first of these is the hereditary factor. Paskind² has shown that the incidence of nervous or mental disorders is significantly greater among relatives of patients with a psychoneurosis than among relatives of persons in good mental health. The patient with a psychoneurosis, it appears, comes from a stock in which nervous instability plays a major role.

The second etiologic factor to be considered

is the personality of the patient prior to the onset of his illness. It is often found that he has always been irritable, sensitive, unusually apprehensive, and worrisome; that he has always responded excessively to emotional stimuli and tended to subordinate reason to his emotions. Persons who possess any or all of these traits beyond the limits usually encountered in the general population may be said to have a neurotic personality. Not infrequently such persons are well gifted intellectually and make pleasant companions despite their failings. It behooves us to be familiar with this personality make-up since its presence in our patient may account for much of his symptomatology.

A source of stress or conflict in the patient's environment is a constant etiologic factor in the psychoneuroses. The nature of this stress is usually easily elicited from the patient upon questioning. Economic difficulties, marital maladjustment, conflict with a member of the family, taxing responsibilities at work, illness in a child, parent or marital partner and organic illness in oneself frequently precipitate a psychoneurosis. All of these situations have in common the fact that they continuously arouse extremely unpleasant emotions in their victim. Any set of circumstances which continuously subjects a person to fear, anxiety, anger, chagrin, embarrassment, frustration or humiliation may ultimately produce a psychoneurosis. The individual with a neurotic personality as may be anticipated feels such emotions more keenly than does a non-neurotic person and hence develops a psychoneurosis more easily than the latter. If the stress is great enough and endures long enough, however, it can produce a psychoneurosis in any one, including the stable or phlegmatic type of person.

Assuming the elements necessary to produce a psychoneurosis are present, what symptoms does our patient present? Mental symptoms usually precede the physical ones. The patient becomes more sensitive and irritable than he was normally. He is annoyed by noises which ordinarily would not annoy him; he takes offense at remarks or actions which usually would not bother him. He cries easily. He is unduly apprehensive. He finds it difficult to apply himself to any task. He forgets things more easily than before. He is mentally depressed. He fatigues easily and not infrequently tells the

physician that on arising in the morning he is more tired than he was when he went to sleep. Insomnia is a frequent complaint in the psychoneuroses. The patient usually has great difficulty in falling asleep and may spend many sleepless nights. Terrifying dreams may disturb his sleep. The mental state of such a patient is apparently far from pleasant.

Physical symptoms soon appear and add to the patient's distress. We do not know how or why physical manifestations occur coincident with emotional experiences, but that they do occur is common knowledge. Thus, blushing in response to embarrassment and tachycardia in response to fear are daily experiences. Cannon³ has shown that emotional stimuli in cats may be associated with marked changes in gastrointestinal activity and gastric secretion. The patient with a psychoneurosis very often feels sensations in the head, trunk or extremities which are probably secondary to the emotional upheaval within him. Such sensations may be so distressing and persistent that they become the major complaints in a psychoneurosis. A patient with a sense of pressure over the precordium, for example, not infrequently becomes convinced that he has heart disease and he may ignore the environmental stress and mental symptoms which preceded the precordial pressure.

The physical complaints made by patients with a psychoneurosis are legion in number, but they frequently have common characteristics. Pain as we recognize it in somatic disease is not part of a psychoneurosis. The patient may speak of "headache" or "pain" in the head or of "pain" in the abdomen, but close questioning usually reveals that we are dealing with an unpleasant feeling, not pain. The patient has a sensation of pressure, tightness, fullness or heaviness in the affected part not a knife-like, throbbing, stabbing or bursting pain. The unpleasant sensation is closely correlated with the emotional status of the patient; it is worse when he is emotionally aroused and it is better following physical or emotional rest. The physical complaints often present bizarre characteristics. The region of the head involved in the "headache," for example, may be circular in shape or have another geometric form. The relation of the abdominal distress to food taking, bowel habits, and body position and its mode of radia-

tion often do not resemble organic disease of the abdominal contents.

"Headache" is an exceedingly common symptom among patients with a psychoneurosis. Most often this consists of a sense of weight, pressure or heaviness on the vertex. A "burning sensation," a "feeling of pins and needles," a "drawing sensation" and a "feeling of things crawling" are other kinds of unpleasant sensations indiscriminately called headache by the patient. Precordial pressure with periodic tachycardia is another frequent symptom in this disorder. A sense of fullness or tightness in the abdomen immediately after the taking of food is a common complaint. Less frequent physical symptoms include paresthesias in one or more extremities, diarrhea, impotence, "dizziness," nausea, vomiting, and urinary frequency. In psychoneuroses precipitated by emotional stress of great severity or sudden onset we may see more striking physical symptoms such as blindness, deafness, aphonia, blepharospasm, convulsive seizures, localized anesthesia, paralyzes of the extremities, inability to stand and walk (astasia-abasia) or urinary retention. Hysteria is the name given to this type of psychoneurosis in which striking physical symptoms occur in response to sudden or severe emotional shock. Patients with hysteria show varying amounts of the mental symptoms discussed above.

The physical complaints previously described occasionally produce so much fear and apprehension in the patient that secondary mental symptoms appear. The patient may take great pains to avoid high places, he may shun large groups of people, he may have a mortal dread of being alone or of being in a closed space. He is then said to have a compulsive or obsessional neurosis. The phobias or obsessions seen in the psychoneuroses usually have a simple explanation. A patient, for example, who is convinced that he has heart disease because of precordial pressure and tachycardia anticipates "heart attacks." His exaggerated fear of such attacks and of being unaided during one makes him dread being alone or in a closed space.

In most patients with a psychoneurosis findings on physical examination are notoriously meager. Clues to the emotional state of the patient may be noted in his facial expression, his apprehensive attitude, his restlessness and in the fine tremor of his outstretched hands. In

many patients the hands are moist with perspiration and the tendon reflexes are brisk. There may be an excessive vasomotor reaction to scratching of the skin. A person with hysteria characteristically presents striking physical findings. Such a patient, for example, may have a hemianesthesia with a hemiplegia, or paralysis in one extremity and anesthesia in another, or he may show blindness and an inability to stand or walk despite the preservation of muscle power in the lower extremities. The findings in persons with hysteria may simulate those of any organic disease of the nervous system. It is possible, however, to recognize the hysterical origin of such findings by their peculiarities. Thus the patient with an inability to speak may be able to phonate well if he whispers or the patient with a paralysis of an arm may be able to support his hand against gravity if his attention is attracted elsewhere. Changes are often absent in hysteria which would be present if the disease were on an organic basis. For example, the tendon reflexes are preserved in hysteria despite the presence of a severe flaccid paralysis of the extremities; a hemiplegia of hysterical origin is not accompanied by increased deep reflexes or pathological reflexes.

The course of a psychoneurosis is usually a chronic one. It often extends over months, years or even decades and may show a remitting character. A spontaneous remission can occur in a psychoneurosis if the precipitating source of stress is alleviated or if the patient adjusts to it. Relapses occur with the appearance of new difficulties for the patient or the intensification of the old ones.

The diagnosis of a psychoneurosis should be based on positive as well as negative evidence. Negative results obtained from a study of the blood chemistry, gastrointestinal x-rays, blood counts, gastric analyses, Graham-Cole test, spinal fluid examination or other laboratory procedures do not make a diagnosis of a psychoneurosis. The presence of physical symptoms with no apparent physical findings does not mean we are dealing with a psychoneurosis. Careful analysis of these symptoms usually enables us to decide whether they are functional or organic in origin. Their location, character, frequency of appearance, duration and relation to the emotional state of the patient are valuable clues if properly interpreted. The presence or absence

of the etiologic factors discussed above, namely a hereditary background of neuropathy, a neurotic personality make-up and a source of stress or conflict, should be appraised. And last but certainly not least, the presence or absence of mental symptoms which are almost pathognomonic for a psychoneurosis may be elicited. If the patient does not volunteer the information, we must determine by specific questioning whether he is unusually sensitive or irritable, whether he fatigues easily or whether he has difficulty in sleeping, a tendency to cry easily, mental depression, difficulty in concentrating at work or other mental changes noted in the psychoneuroses.

The differentiation of a psychoneurosis from somatic disease is a very common diagnostic problem. A careful history which includes the points mentioned above is of primary importance. Negative data from physical or laboratory examinations merely confirm a tentative diagnosis of a psychoneurosis which has been derived from a complete history of the case. It is well to keep in mind, however, that psychoneuroses can occur as a complication of somatic diseases.

Psychoneuroses are not infrequently confused with other disorders of the nervous system. Persons with early manifestations of dementia paralytica or cerebral arteriosclerosis may be mistaken for patients with a neurosis. The loss in practical efficiency and irritability seen in a mild case of schizophrenia may lead to an erroneous diagnosis of a psychoneurosis. As the disorder progresses, however, the true diagnosis becomes apparent with the occurrence of apathy, indifference to surroundings, self-neglect, seclusiveness and later delusional ideas or hallucinations. A large proportion of patients with mild cases of manic-depressive psychosis in the depressed phase are also incorrectly labeled psychoneurosis. Patients with a manic-depressive depression fatigue easily, may be irritable and sensitive, are depressed and often complain of subjective sensations in the head, chest or abdomen as persons with a neurosis do. Several distinguishing features between these two disorders are usually present. A precipitating source of conflict is almost constant in a psychoneurosis; in the manic-depressive depression it is usually absent. The patient with the latter disorder may show indifference to things which formerly were

of interest to him. The mental depression of this psychosis is more profound than that seen in a psychoneurosis and often is so oppressive that the patient would endure a great amount of physical suffering to be rid of it. These patients have a hopeless outlook on the future and they often contemplate or attempt suicide. They are frequently self-accusatory and regard themselves as unworthy or inferior persons. It is characteristic for patients with a psychoneurosis to have great difficulty in falling asleep. The patient with manic-depressive depression often falls asleep easily but awakens in the early morning hours and cannot fall asleep again.

Malingering is often suspected in patients with a psychoneurosis. This is usually not justified. Close observation of a patient with a psychoneurosis reveals that unlike a malingerer he is genuinely concerned with his symptoms and is eager to be relieved of them. The person who develops a neurosis following an accident is especially liable to be called a malingerer because the question of compensation may arise. It is well to remember that the shock of an accident, the inability to earn a living during the illness resulting from an accident and apprehension over one's future state of health can produce a psychoneurosis in a susceptible person. This kind of neurosis we call a "compensation" or "traumatic" neurosis.

From a consideration of the etiologic factors in a psycho-neurosis clear cut therapeutic ideas emerge. Removal of the precipitating source of stress or conflict should cause the disorder to disappear. It often does. A scholastic program which is too heavy occasionally produces a mild psychoneurosis in a susceptible college student. Spontaneous cures occur in such students when the summer vacation appears. In the patients who consult a physician for a psychoneurosis the source of stress is usually more difficult to remove. To effect a cure in a patient with a neurosis it is often necessary to do more than aid him in the removal of his environmental difficulty. We must also allay the fear and apprehension with which the patient regards his symptoms. For example, a man who develops a psychoneurosis under the stress occasioned by overwork and heavy responsibilities may have severe pressure sensations in the head in addition to his mental symptoms. The distress in the head may be so great that the patient fears he

may be on the verge of going insane or that he has some other disease of the brain. It is not enough to relieve him of part or all of his burden of work. The fear of impending insanity, brain tumor or other disease of the brain must be abolished. A careful history and physical examination should support a clear explanation of the patient's illness. He should be told what a neurosis is and what it has done to him. If the patient is intelligent, he usually grasps the explanation in the first or second interview, and if the original source of conflict is corrected, he may be cured. It is of no benefit to this patient to tell him that his symptoms are imaginary and that he must forget about them.

It is not always possible to correct the patient's source of stress. When this is so, we attempt to give the patient a philosophic attitude toward his difficulty. We try to have the patient look upon his conflict or problem as inevitable and unalterable at the present time. It is pointed out to him that entertaining strong unpleasant emotions is of no avail in correcting the source of stress, and that such emotions are responsible for his illness. An attitude of resignation may be urged as the most reasonable one to take. Such psychotherapy is often efficacious in persons with a relatively mild psychoneurosis, in persons with good intelligence or in those who do not have a highly neurotic personality make-up.

Sedatives if properly used are a most valuable adjunct in the treatment of the psychoneuroses. Sodium bromide in adequate doses is a highly satisfactory sedative. The amount of this drug required to produce optimum effects in patients with a psychoneurosis varies from 30 to 120 grains daily. The amount given must be large enough to produce sedation and small enough to avoid bromide intoxication. A usual dose is 45 or 66 grains daily in three portions. For proper usage of sedatives it is important to understand their effects in persons with a neurosis. These drugs reduce the patient's sensitivity to emotional stimuli. In a patient under the influence of sedatives unpleasant emotions are less easily aroused and not as keenly perceived as in the untreated patient. Total or partial symptomatic relief frequently follows the use of such drugs. They are of aid particularly in instances where the environmental stress cannot be relieved. They are a crutch as it

were, useful, often essential, but not able to displace therapy directed at the fundamental cause of the psychoneurosis.

Persons with a neurotic personality are predisposed to repeated psychoneuroses. They find conflict in circumstances which most persons either ignore or easily overcome. It would be desirable to alter such a person's outlook on life, but that is difficult and perhaps not possible at the present time. To prevent the development of a neurotic personality is in the realm of mental hygiene. Whether or not this movement has attained success in this ideal is as yet unproved.

The prognosis of the psychoneuroses is good. Curran⁴ reports that 73% of persons with a psychoneurosis were greatly improved for one to three years after the cessation of treatment. Results of therapy are difficult to evaluate, but it may be said that the majority of patients can be given some relief. If the patient's source of conflict can be resolved, or if it is met philosophically, the patient ultimately recovers from his illness. Poor results are obtained in a patient with a highly neurotic personality make-up.

It is perhaps advisable to consider some of the popular theories dealing with the psychoneuroses. According to Freud⁵ symptoms of a psychoneurosis result from a mental conflict below the level of consciousness. A patient with this disorder is believed to subconsciously desire something against which his conscious mind rebels. The conflict so produced and of which the patient is believed to be entirely unaware engenders symptoms of a neurosis as a release phenomenon. Adler⁶ rejects Freud's concept of the unconscious as it applies to persons with a psychoneurosis. He regards the neurosis as a result of maladjustment between the patient and his environment. The maladjustment is said to be dependent upon an incomplete or improper development of the patient's personality. A so-called "inferiority complex" is believed to develop in early life as a result of physical defects, jealousy toward another member of the family or improper parental discipline whether it be too strict or too lax. During adult life the intense feelings of inferiority a person with this complex has in the presence of his fellow men is said to produce conflicts.

Adherents to the view of Freud would treat a psychoneurosis by psychoanalysis which it is

believed exposes to the patient for the first time his subconscious desires. The patient's understanding of these desires it is said causes the conflict they produce to disappear. Adherents of Adler's views believe that therapy in the psychoneuroses should be directed to an explanation of the patient's sense of inferiority. The origin of this complex should be explained to the patient. He should also be told that his illness results from a conflict between his sense of inferiority and the problems of everyday life. When the patient understands the cause of his "inferiority complex" and realizes its evil effects he is in a position to combat it successfully by destruction or compensation.

The validity of both of these views and of others closely allied to them remain to be proven. From experience with patients having a psychoneurosis, I believe it is justified to accept the etiologic factors mentioned in the earlier part of this paper. They do not completely explain the psychoneurosis but they offer sufficient guidance to aid in recognizing and treating persons with this disorder.

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TOXICITY OF SULFANILAMIDE

Severe transient myopia following use
of Sulfanilamide

Report of a Case

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It has been repeatedly demonstrated that administration of sulfanilamide in therapeutic doses to human beings produces toxic reactions. These vary from very mild transient symptoms such as nausea and dizziness^{1,2} which are quite common, to the most severe toxic effects such as fatal granulopenia^{3,4,5,6,7}. Among other toxic

effects which range between these in severity may be mentioned the following, acidosis^{1,2}, various anemias^{8,9}, methemoglobinemia and sulfhemoglobinemia^{10,17}, skin eruptions including exfoliative dermatitis^{18,27}, cyanosis^{1,2,28}, fever^{1,2,29} and nephritis³⁰. An ocular toxic effect from sulfanilamide has been reported by Buey³¹; this consisted of an optic neuritis with central scotoma in a 16-year-old girl. This patient, however, showed an idiosyncrasy to the drug from the beginning, developing cyanosis and headache on two other occasions which required stoppage of the drug.

CASE REPORT

White male, aged 41, presented himself December 11, 1937, with symptoms of nervousness, insomnia for one year, and several attacks of extreme weakness, accompanied by a feeling of impending dissolution for three years. During one of the latter attacks a coronary episode was suspected, but no evidence was found for it. No dyspnea, precordial pain or edema were complained of.

Past History included the usual childhood diseases and malaria 20 years ago while residing in Texas. Although venereal diseases were emphatically denied, patient admitted having a recurrent swelling of right testicle which was last treated about six months ago. A morning drop of pus has also been noted at the urethral meatus.

Physical Examination revealed a moderately obese well-developed white male not acutely ill. Height 71 inches, weight 218½ pounds, temperature was 98.2° F., pulse 64, respirations 20 per minute, blood pressure 118 mm. of mercury systolic and 80 diastolic.

The heart was within normal limits, and the lungs were clear. There was some enlargement and tenderness of right epididymis. Rectal examination revealed a slightly enlarged boggy prostate.

Laboratory Findings included urinalysis which showed a specific gravity of 1020, a few shreds visible to the naked eye, reaction acid to litmus. No albumin or sugar were found. A centrifuged specimen showed a few pus cells and epithelial cells. Prostatic smear showed a great number of pus cells singly and in clumps. Gram stained smears of morning drop of pus revealed numerous polymorphonuclear leukocytes, epithelial cells and many types of bacteria. The third smear showed gram negative intracellular diplococci. The Kahn test of the blood was negative. Blood count showed 4,900,000 red blood cells, 87% hemoglobin (Dare), and 7,700 white blood cells with normal differential count. Fluoroscopy of chest was negative. Four lead electrocardiograms revealed no abnormalities.

In view of the poor response of chronic gonorrheal prostatitis to the conventional methods of therapy, and the success reported with sulfanilamide in the treatment of the acute infection^{31, 32, 33, 34} it was thought advisable to try this drug in this case. The patient was started

on .9 g. of sulfanilamide in tablet form four times a day for two days. This was reduced to .6 g. four times daily for three days and this was further reduced to .6 g. three times daily till 30 g. were taken.

The patient was cautioned against taking cathartics, and was told to report immediately any untoward symptoms. He, however, felt perfectly well throughout this period. A blood count taken at the end of medication showed no reduction in granulocytes.

Because the urine continued showing shreds and prostatic secretions, continued to be loaded with pus, prostatic massage and potassium permanganate irrigations were continued. Gram stain of morning urethral pus showed numerous polymorphs, but no gonococci were detected. On February 22, 1938 after intercourse, the urethral pus showed some extracellular gram-negative diplococci. March 2, prostatic massage yielded about 1 c.c. of frank pus. The last two findings suggested the advisability of another course of sulfanilamide especially in view of the lack of toxic reactions from the first course. The patient was again told to take .9 g. sulfanilamide four times a day along with equal amount of sodium bicarbonate. After two doses were taken the patient had a violent chill, became nauseated, complained of some chest pain and noted blurring of vision. His vision rapidly became so poor that he was unable to read a printed page and was unable to see clearly even the large headline type in a newspaper.

The patient consulted me the same evening. He still complained of chilly sensations, but the most distressing complaint was extreme blurring of vision bordering on blindness. He had difficulty in recognizing people, could not do any reading or writing and hence was unable to work.

The physical examination outside of the ocular disturbance revealed a low grade fever of 100° F. by mouth, pulse 116, B.P. 114/78. Chest and abdomen were negative. The urine was negative except for the shreds, and the prostatic smear the following day continued to show myriads of pus cells. The white blood count was 8,600 with a normal differential count.

Ophthalmological examination done two days later by Dr. A. H. Herman revealed vision of 20/200 in right eye and 15/200 in left eye. The pupils were regular 5 mm. in diameter, reacted normally to light but sluggishly to accommodation. Ophthalmoscopic examination revealed a normal disc and normal blood vessels, but there appeared to be some edema of both retinae. The vision was brought to normal by -2.50 dipter lens for right eye and -2.75 dipter lens for left eye following use of homatropine.

After one week the patient's vision was greatly improved, so that he was able to do ordinary tasks with only little impairment. Within two weeks the patient reported that his vision was as good as usual and offered no subjective complaints. He did not return for another refraction. The prostatitis improved with the other measures used. In May, 1938, culture and smears were negative for gonococci.

DISCUSSION

This case is of interest because of the unusual

toxic effect, and time of its development. Toxic ocular manifestations from sulfanilamide therapy seem to be very rare. An optic neuritis has been previously reported³¹. Our patient developed a severe myopia apparently on the basis of an edema of the retina. The rapid development and extreme impairment of vision is quite alarming to both patient and physician. The knowledge of a good prognosis is gratifying.

This patient took 30 grams of sulfanilamide without the development of even the mildest toxic symptoms. This led to the conclusion that the patient could take the drug with impunity. Two months later two doses of the drug produced severe reactions. This warrants the conclusion that an individual may be sensitized to the drug. Probably on repeated use of the drug in individuals who previously showed no reactions, more toxic effects will be brought to light. Such an experience suggests that great caution may be imperative in using the drug in an individual who has been previously exposed to it.

SUMMARY

1. A case of transient myopia due to edema of retina following use of sulfanilamide is reported.
2. The development of the toxic symptoms after two doses in a patient who has two months previously taken 30 grams of the substance suggests the development of sensitization to the drug.
3. Caution is suggested on repetition of the drug after a prolonged interval.

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5240 Harper Ave.

THE KINDEST OF WORDS

A very lonesome American tourist in London went into a restaurant one morning and, after scanning the menu disconsolately, said to the waitress:

"I'd like two soft-boiled eggs—and some kind words."

In due time the waitress returned, placed the eggs before him, and started away.

"What about the kind words?" inquired the lonesome one.

With a quick glance around the girl bent over and whispered in his ear:

"Don't eat them eggs!"

STATISTICS CONCERNING THE STAGES OF TRACHOMA IN THE SOUTHERN ILLINOIS TRACHOMA CLINICS

MAX HIRSCHFELDER, M. D.

HARRISBURG, ILL.

During the month of August, 1938, every patient examined by the physician in charge of the Southern Illinois Trachoma Service, was listed as to the stage of the trachomatous disease present. This included both old and new patients of the clinics. The purpose of this survey was to determine how many active cases are coming to the clinics and how far the disease is under control, after four years of trachoma service. This survey was made in each of the five clinics on ordinary clinic days, thus representing 20 clinic days. To show how many patients come for examination and are found to be free from trachoma, a separate column is presented, divided into pathological and non-pathological cases.

The stages mentioned follow the description of Mac Callan. A few subdivisions were, however, introduced as they fit the purpose of statistics of trachoma in Southern Illinois better than the stages proposed by Mac Callan.¹

Stage 1 is applied to beginning trachoma with very slight formation of follicles and incipient pannus.

Stage 1-2 characterizes those cases which show considerable folliculosis, but no inflammatory signs and very little, if any pannus.

Stage 2a designates the succulent, active type of trachoma with marked secretion, photophobia, distinct granulositis and, usually, active pannus. It corresponds to Mac Callan's stage 2a.

Stage 3 represents a stage in which scarring and signs of activity are present simultaneously.

Stage 3-4 is applied to cases who are apparently quiet and show considerable scarring, corneal opacities, and inactive pannus. These cases usually have a reduction in vision due to corneal damage. It is my belief that those cases may become active again if they are not kept under antiseptic and hygienic measures.

Stage 4 is applied to those absolutely quiet

From the Governor Horner Trachoma Clinics. Medical Director: Harry S. Gradle, M. D. (These clinics are sponsored jointly by the Department of Public Welfare of the State of Illinois, by the Illinois Society for the Prevention of Blindness, and by the Works Progress Administration.)

1. Mac Callan: Trachoma. London, 1936.

cases with little or no damage. They show only superficial scars in the lids, or were diagnosed as trachoma in former years but, as a result of the treatment, do not show evidence of the disease now.

Suspect is applied to cases who show a few follicles in their lower or upper conjunctival fold but cannot be diagnosed with certainty as trachoma.

COMBINED STATISTICS OF 20 CLINIC DAYS IN THE FIVE DIFFERENT CLINICS

Total number of patients examined: 1,296.
Of those the "positive" and "suspect" trachoma cases numbered 804 or 62 per cent.

Divided as follows:

Stage 1	23 or 2.86 per cent.
Stage 1-2	43 or 5.3 per cent.
Stage 2a	42 or 5.2 per cent.
Stage 3	151 or 18.7 per cent.
Stage 3-4	201 or 25 per cent.
Stage 4	218 or 27.10 per cent.
Suspect	126 or 15.70 per cent.

No trachoma was found in 492 (38 per cent) new patients who came to the clinic for diagnosis.

Of those 358 (72.7 per cent) showed no pathological changes, and 134 (27.3 per cent) presented pathological, non-trachomatous conditions.

It is apparent from these figures that the percentage of fresh, active, malignant trachoma in Southern Illinois is now relatively small (5%). This type (Mac Callan's Stage 2) must have been much more frequent in former years, as the lids of nearly 45% of the patients show the severe damage caused by the disease. It is not possible to list all the trachomatous cases in Southern Illinois—3,200 of which are on file in the trachoma clinics. It can, however, be assumed that the percentage of really active malignant cases (Stage 2) is not greater than five per cent. as patients in this stage usually come to the clinics to find relief.

It is probable that the number of fresh active cases will further diminish as the work of the clinic goes on. This work is on its way to bring trachoma in Southern Illinois not only under control, but to eliminate the disease. In a large percentage of the cases the damage is already done, and a large part of the work in the clinics consists in the prevention of "flare-ups" in these old cases, or in the care of the acute exacerbations, often complicated by corneal ulcers. The second task of the clinics deals with the treatment of those fresh active malignant cases, bringing them into a quiet stage and teaching them how to prevent spreading the disease. A third task, finally, is the recognition of beginning trachoma at a time when it is possible to check

the disease before permanent damage is done. It is, therefore, not unjustified to state that the next medical generation will regard the endemic occurrence of trachoma in Southern Illinois as "past history."

HYPOTHERMIA IN INDUCED HYPER- INSULINISM

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In the studies by Banting and Best et al.,¹ in 1922 on the effect of insulin on normal rabbits, one chart shows a fall in rectal temperature as the hypoglycemia progressed, but no comment is made on this finding. Fletcher and Campbell² in 1922 did not mention this as part of the hypoglycemic symptom complex which they described. One of the first observations on the fall in temperature occurring during insulin hypoglycemia was that of Dudley, Laidlaw, Trevan and Boeck³ in 1923, who found that in mice that had received insulin, the fall in blood sugar was associated with a consistent fall in rectal temperature and a lowered carbon dioxide output. M. Matton⁴ in 1924 confirmed these observations and concluded that they were indicative of a lowered metabolism. He added that in doses insufficient to cause hypoglycemia these symptoms did not occur, and that the injection of glucose relieved them when they were present. Nuyons, Bouckaert and Sierens⁵ in 1924, found that this drop in temperature was a premonitory sign of convulsions and stated that it showed a disturbance of the thermo-regulatory apparatus. Vischer and Green's⁶ results the same year are unconfirmatory. Since then from time to time papers on insulin have failed to mention or have confirmed the finding of this symptom.

During the course of insulin shock treatments on schizophrenic patients at the Chicago State Hospital, systematic observations were made with a view both to classify the symptoms found and to evaluate their significance. One of the consistent findings was that as the hypoglycemia progressed, the rectal temperature fell.⁷ It was further noted that the fall in temperature was not related quantitatively to either the dose of insulin given or the resulting blood sugar level

From the Chicago State Hospital. Edward F. Dombrowski, managing officer.

except that, in patients whose temperature had a tendency to fall to low levels, large doses of insulin produced greater falls than smaller doses. The phenomenon seems to be, to a large extent, one that is determined by the individual and that remains consistent only for the individual. Table 1 shows examples of these temperature curves from some 1500 daily records kept.

result of liberation of epinephrin by the adrenal glands.

That the foregoing explanation of why the temperature falls during insulin hypoglycemia is insufficient is strongly suggested by the following observations. Thirty patients were given external heat during a course of insulin therapy and their rectal temperatures taken at 30 min-

TABLE 1

Pt.	Insulin in U		Rectal Temperature at ½ Hourly Intervals							
	Given at 7:00									
No. 1	60 u.	.....98.8	98.8	98.6	98.2	97.4	97.2	96.6	96.0	95.4
No. 1	95 u.	.....98.6	98.6	98.2	97.6	96.6	96.4	95.8	95.4	95.0
No. 1	125 u.	.....98.6	98.6	98.4	97.4	96.8	96.0	95.0	94.2	...
No. 1	160 u.	.....98.6	98.6	97.6	97.0	96.0	94.8	94.0	93.6	...
No. 1	310 u.	.....98.0	98.0	98.0	98.0	96.0	95.0	94.6	92.4	...
No. 2	60 u.	.....98.6	98.6	98.4	98.0	97.6	97.2	97.0	...	...
No. 2	170 u.	.....98.8	99.0	98.8	97.0	96.4	96.0	96.0	...	...
No. 2	240 u.	.....98.0	98.0	97.8	97.0	96.0	95.6	94.6	...	...
No. 3	20 u.	.....98.6	98.6	98.6	98.2	98.0	97.8	...	...	...
No. 3	30 u.	.....98.8	98.8	98.6	98.0	98.0	97.6	97.4	...	...
No. 3	45 u.	.....98.6	98.6	98.0	97.8	96.4	95.8	94.6	...	...
No. 3	70 u.	.....99.0	99.0	98.0	96.2	94.8	94.2	93.8	...	...

No satisfactory explanation of the mechanism of this hypothermia has appeared. The conception of the heat regulatory mechanism which has come to dominate our logic at the present time is that of a dual type. Heat production is a chemical effect of the oxidative portion of metabolism. Heat loss is effected by physical means: peripheral capillary dilatation and increased radiation, diaphoresis and increased evaporation, increased respiratory exchange, et cetera. Observation of the patient in insulin shock at first seems to bear out this concept, since the profuse diaphoresis, the flushed face, and the increased blood pressure and pulse would all indicate that physical heat loss was increased. If the above suppositions are correct then we must interpret the fall of temperature in insulin shock as primarily a physical phenomenon and the result of increased heat loss.

That the complementary operation of a lowering of the metabolic rate does not occur, and that indeed the opposite is true, has been shown repeatedly. As early as 1923, Boothby and Wilder⁸ declare that following insulin injection the BMR remains constant until the blood sugar reaches the critical level for the individual. "The increase in metabolism at that point seems to be secondary to the mechanism which alters the drop in the blood sugar curve when the latter reaches its critical level." The mechanism to which they refer is complex and is the indirect

ute intervals till coma occurred. In the first experiments the external heat consisted of six hot water bottles placed next to the body beneath three woolen blankets completely covering the patients and leaving only their heads exposed. There was little or no result on the falling temperature as compared with alternate days on which no external heat was given. Consequently in later experiments the addition was made of an infra-red lamp placed over the dark woolen blankets in such a way that the entire bed surface felt hot to touch throughout the treatment. In these cases the fall in temperature was only slightly influenced. Table 2 illustrates the influence of these experiments on the rectal temperature curve. These experiments are attended by a considerable element of danger to the subject as was first shown by Voegtlin and Dunn⁹ who showed (1923) that there is a linear correlation between environmental temperature and mortality in rats receiving insulin. Consequently no further attempts to maintain the body temperature at its normal level by such means were made. To demonstrate the adequacy of this form of temperature conservation, control patients were not given insulin and their temperature curves over the same period of time show an actual rise in temperature. Table 3 shows the temperature curves of fasting patients who have not received insulin but who were given external heat as described above.

The conclusion to which one is impelled by these observations is that in insulin shock therapy the resulting temperature fall must be due to at least one additional factor besides physical heat loss. Although it is not wise to draw physi-

Huxley and Fulton's¹³ findings that when the latter are warmed they, too, become susceptible to the effects of insulin.

SUMMARY

Observations on the hypothermia associated

TABLE 2

Pt.	Insulin in U Given at 7:00	Test	Rectal Temperature at ½ Hourly Intervals						Onset of coma
No. 1	80 u.	C	97.8	97.6	97.4	96.8	96.0	94.6	10:15 A. M.
No. 1	80 u.	Ht	97.8	97.2	97.4	97.0	96.8	96.0	10:40 A. M.
No. 1	80 u.	Ht	97.8	97.8	97.4	97.0	96.0	95.4	10:10 A. M.
No. 1	80 u.	C	98.2	97.8	98.0	96.8	95.8	95.4	10:15 A. M.
No. 2	85 u.	C	99.0	98.6	98.6	98.4	97.0	96.4	10:40 A. M.
No. 2	85 u.	Ht	99.2	98.8	98.6	98.6	98.0	96.8	9:50 A. M.
No. 2	85 u.	Ht	99.0	98.6	98.4	98.0	97.8	...	9:25 A. M.
No. 2	85 u.	Ht	99.0	98.8	98.6	98.6	97.4	96.6	10:05 A. M.
No. 2	85 u.	C	99.2	98.6	98.4	98.4	97.2	96.6	10:35 A. M.
No. 3	100 u.	C	98.0	98.0	97.8	97.4	96.8	96.0	10:45 A. M.
No. 3	105 u.	IR	98.8	98.6	98.6	98.2	97.6	97.2	10:20 A. M.
No. 3	105 u.	C	98.4	98.4	98.2	98.2	97.2	97.2	10:50 A. M.
No. 3	110 u.	IR	98.4	98.0	98.0	97.0	96.6	96.6	10:00 A. M.
No. 3	110 u.	IR	98.0	98.0	98.0	97.6	97.6	97.2	10:15 A. M.
No. 3	110 u.	C	98.2	98.0	98.0	98.0	97.4	97.0	10:40 A. M.

C: Control. Ht: External heat as described above.

IR: External heat plus infra red light as described above.

ological inferences from clinical observations it seems logical to assume that this other factor is chemical in nature and endothermic in type. Such an assumption demands the corollary that the heat necessary for completion of the reaction must be derived from other, exothermic, reactions or from extraneous sources.

with insulin hypoglycemia in man are recorded.

The results of attempts to conserve body temperature by physical means during insulin hypoglycemia are given.

An attempt is made so to modify the existing conception of the thermo-regulatory apparatus by inclusion of an endothermic chemical reaction as

TABLE 3

Pt.	Test	Rectal Temperature at ½ Hourly Intervals					
No. 1	IR .....98.2	98.8	98.8	99.0	99.4	99.6	99.8
No. 2	IR .....98.2	98.6	98.8	99.2	99.4	99.8	100.2
No. 3	IR .....98.4	98.6	98.6	98.8	98.8	99.4	99.8
No. 4	IR .....98.2	98.4	98.8	98.8	99.2	99.4	100.0
No. 5	IR .....98.8	98.8	99.2	99.4	99.8	100.4	100.8

The available laboratory facilities here are not such that we may investigate the nature of the endothermic reaction but we propose that it is the transformation of glucose into one of its storage forms such as glycogen. Such a theory is necessary in order to explain satisfactorily why heat should hasten the onset of symptoms due to insulin hypoglycemia and why as has been shown by Cassidy, Dworkin and Finney,¹⁰ animals artificially cooled to a body temperature of 25° C. do not die from insulin convulsions long after they should have done so had their body temperature been normal. It is in keeping with the findings of Olmstead,¹¹ Krogh¹² and others that homoiothermic animals succumb more readily to insulin than poikilothermic animals and with

to explain satisfactorily the clinical findings in insulin hypoglycemia.

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COMPARATIVE STUDY OF SOME PATIENTS' HEADS

(Preliminary Report)

at the

Anna State Hospital

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Every individual has certain differences which characterize him as an individual. These differences are measured in different ways depending upon whether they are physical or mental. Physical differences are largely inherited and have of a necessity been subject to change down through the ages. They can be measured in a physical manner, while mental capacities or differences can be measured only by one's ability to adapt, perform and survive in his various environments.

In considering the physical differences of individuals we are concerned in the report of an examination and study of some three hundred and thirty-three heads. The reason for limiting the examinations to heads was in part prompted by observance of what looked to be a majority of elderly people with apparently round and somewhat larger heads than are generally seen in younger individuals in adult life. If this observation were true could not the biological significance be questioned? The finding of round or larger heads in aged individuals would also bring up the problems of human fitness, awareness and longevity. In the following comparative examinations of both men and women the ages range between twenty-seven and ninety and eighty-seven hundredths years. They are patients mostly in the upper age groups located at our Male and Female Cottages. Their heads were carefully measured through the following diameters, namely, biparietal or transverse; fronto-occipital or distance from front to back of head in the greatest diameter; occipitomenta or distance from point of chin to back of head; and the circumference or distance around the head in the greatest diameter.

Comparatively speaking the shapes of heads observed appeared to vary from egg-shaped and narrow heads to round or oval types. It is extremely likely that the shape of the skull does not change in relative contour from infancy to old age. However, we know that many asymmetrical heads in infancy which were due to

dystocia, difficult labors and instrumental deliveries are only transitory since they eventually assume normal shape characteristic of the individual and do not persist in adult life. Despite this fact some asymmetrical heads were found in addition to the variations between narrow and round heads during the examinations. Some of the heads were rather flat in lateral areas in the occipital region and bumps and depressions were noted especially along the suture lines. Noteworthy, is the fact that most of the asymmetry was found in the occipital and parietal regions of the skull.

Mere observance of heads in individuals without actually measuring them are misleading in judging their size and shape because one can be influenced by physical make-up, body-weight, length and breadth of face and neck and even hair distribution, hence, conclusions which are deducted in this manner are wrong for the above reasons.

Comparatively smaller heads in all diameters seem to be consistent with the few cases of mental deficiency examined. Also, irregularity and departure from normal contours were evidenced in these cases more frequently than in other cases of mental disorders.

The following mental classifications were represented in the cases examined:

	Male		Female	
	No. Cases	Per Cent	No. Cases	Per Cent
Manic-Depressive Psychosis ...	10	3.3	..	...
Epileptics	10	3.3	1	2.7
Cerebral Arteriosclerosis	147	49.0	6	16.0
Dementia Praecox	70	23.0	24	64.0
Syphilis (central nervous system)	25	8.3	1	2.7
Alcoholism	4	1.3	..	...
Postencephalitic	3	1.0	..	...
Psychopathic Personalities ...	3	1.0	..	...
Without Psychosis	4	1.3	..	...
Mental Defective	20	6.6	5	13.5

It seems that inherited physical characteristics of heads must be considered in evaluating a given individual both physically and mentally. It is further apparent from observation that as age increases so does the average increase in certain measurements or dimensions in the living head. This is evident when comparing the difference between transverse measurement and the circumference in one group (ages 27 to 53.7) and in the other group (ages 53.7 to 90.87).

It will be interesting in lieu of previous statements to compare the following average measurements according to age groups:

MALES

Ages 22 to 52.7 Years
Number of Cases—129

Average transmeasurement	14.38 cm.
Average longitudinal measurement	19.00 cm.
Average circumference measurement	56.12 cm.

Ages 52.7 to 90.87 Years

Average transmeasurement	14.97 cm.
Average longitudinal measurement	19.00 cm.
Average circumference measurement	56.15 cm.

FEMALES

Ages 43 to 53 Years
Number of Cases—16

Average transmeasurement	14.53 cm.
Average longitudinal measurement	18.33 cm.
Average circumference measurement	54.38 cm.

Ages 53 to 63 Years
Number of Cases—15

Average transmeasurement	14.58 cm.
Average longitudinal measurement	18.01 cm.
Average circumference measurement	54.43 cm.

Ages 63 to 76 Years
Number of Cases—10

Average transmeasurement	14.92 cm.
Average longitudinal measurement	18.30 cm.
Average circumference measurement	54.61 cm.

The mean circumstance does not increase in proportion to the increase in transverse diameter, why? It may be that in measuring the circumference of the head the tape measure was placed around the head and the amount of hair in the different age groups would explain this difference. The transverse and longitudinal measurements were not affected by the amount of hair since the instrument for taking these measurements was placed directly on the skin. The average male past fifty-two years of age has less hair than a younger man.

This is a survey of a limited number of cases and perhaps the difference in measurements does not justify conclusions, nevertheless, it is significant that as age increases the average size of the head in certain dimensions changes, namely, an increase in transverse measurements. The purpose of this summary is to point out the difference in various ages; conclusions are that the average elderly individual does have a more rounded head than the average younger person.

REMISSIONS IN A CASE OF SCHIZOPHRENIA BY TWO UNUSUAL MECHANISMS

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CHICAGO

We present a case of schizophrenia with two remissions brought about by rather unusual circumstances. M. M., age 45 years, married, male,

From the Cook County Psychopathic Hospital.

was first admitted as a patient to the Cook County Psychopathic Hospital on November 10, 1937. He was restless, threatening, and warned everyone to get ready for the final judgment. During the past five years he had become extremely religious and on two occasions changed his church affiliation. On November 14, 1937 while being given a tub bath, a second degree burn involving almost the entire skin surface of the back was accidentally sustained. Following this his temperature rose to 103 degrees and remained elevated for a period of ten days. It was noted that during this time his mental condition improved. He was discharged on December 23, 1937, seemingly free from his former delusional ideas and hallucinatory experiences.

He returned to work and carried on efficiently for one month. At this time mental symptoms again appeared. These were at first somatic in character, later he expressed the delusion that his food was poisoned and in a short time expressed his former bizarre religious ideas.

He was readmitted to the Cook County Psychopathic Hospital on March 31, 1938 in an acutely disturbed state, hearing voices and insisting that his body was full of bugs. Metrazol shock therapy was begun and eight convulsive doses were given. Rapid improvement occurred and patient was discharged on May 19, 1938. At this time his family remarked that he was now like his former self.

We call attention to this case because of the two different agents that brought about remissions. It has occurred to us that an agent of therapeutic value may have been elaborated in the body at the time of the accidental burn. We are at present working on this problem.

TREND IN DIABETES

Diabetes mortality continues to show marked concentration in middle-aged and older women. This characteristic is becoming accentuated.

In the teens, many more girls die of diabetes than boys.—Metropolitan Life Ins. Co.

DIABETES NOT INCREASING

Diabetes is not increasing now if allowance is made for shifts in the age and sex make-up of the population. The *adjusted* death rates have been unchanged for the past six years.

The major part of the continuing increase in *crude* mortality from diabetes reflects merely the growing proportion of old people in the population of the world.—Metropolitan Life Ins. Co.

PROCTOSCOPIC EXAMINATION

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Apologies to the specialist for presuming to write on such a primer subject. Unless one is especially interested in proctology one does not, as a rule, subscribe for special journals or read technical articles on diseases of the rectum.

As a rule the physician doing general surgery or medicine is the first to see these early cases of bleeding from the rectum or obscure anemias or change in bowel habits, etc. We also know that age is no longer a guide in determining for or against cancer. It is a recognized fact that about 50% of the cases of carcinoma of the rectum have been operated on for "bleeding piles."

When we see a patient with any symptoms referable to the rectum what a great diagnostic satisfaction to yourself when you can say "I can get a direct view of the rectum and sigmoid for a distance of 25 c.m."

The mechanical and technical use of the proctoscope is not difficult but, as with many instruments of precision, the interpretation is the difficult part. We all use a stethoscope, so again the interpretation comes to the fore. If you have a proctoscope or have access to one and the energy to use it, you will come closer to making a correct diagnosis than to dismiss the patient with some suppositories and not even make a digital examination. A thorough and practical proctoscopic examination can be done on any kitchen table. Maybe this tide of social medicine can, in a measure, be placed at our own door. Why? We have not examined our patient. It is for these reasons that I make a plea for the more general use of the proctoscope as an office procedure.

The most essential procedure leading up to a successful proctoscopic examination is the thorough cleansing of the rectum. Have your patient eat a light supper the evening before, providing your examination is to be 9 or 10 A. M. About 9 P. M., have the patient take a thorough cleansing enema, preferably lying down. Continue the enemas until the returns are clear. Then the following morning at 7 A. M., have the patient repeat the cleansing enema in the same manner. After this have the patient eat a good breakfast. I say a "good" breakfast advisedly because the examination may be somewhat of an ordeal for

some patients. With a good breakfast they are less liable to faint.

My choice is the knee-chest position. Moderately fat patients are easier to examine than thin patients. This may be just a coincidence in my experience or it may be due to a longer mesentery in the fat patients.

Your examination may or may not be preceded by a digital examination or the use of the anoscope. Your first observation will be made by using the 15 c.m. instrument. In introducing the shield with the obturator in place you constantly bear in mind the anatomy of the rectum and the contour of the bony pelvis. With the patient in a good knee-chest position I have noticed a marked suction action on the instrument and, of course, this helps a great deal. In this first step you may not need to use the inflation bulb. Being familiar with the Welch-Allyn type I think the inflation bulb gives one a better view. Giving the patient rest periods is essential. Patients in the third decade and up, are not accustomed to these knee-chest positions or whatever position you select. You must have patience and plenty of time. If the patient is nervous or frightened you had better make another appointment. The first rest period comes after the digital and anoscope examination. There is no great pain connected with this so the patient is reassured that it is not so bad. You should encourage patients by assuring them that there will be no great amount of pain. The second period is after the 15 c.m. examination and the third after the 25 c.m. examination. Some patients may faint after the second or third examination. Some may complain of abdominal pain after inflation of the sigmoid. Anticipate this by telling them and they will be less frightened. If these patients lie down in the recovery room for one-half hour they will then be able to leave your office feeling well.

In making your observation you will be able to see beyond your 25 c.m. shield providing you use the inflation bulb. This is the point at which the patient may complain of pain. You can open the shutter and release the air after the observation. From this point I have made it a practice to survey the inner wall of the bowel as I gradually withdraw the proctoscope because the bowel collapses just in the line of vision. Should any point of interest or a suspect lesion appear, stop the withdrawal and inflate the bowel

enough to smooth the surface so as to satisfy yourself that there is or is not a point for closer observation.

After you have made a thorough observation you may not then be completely satisfied. I recall very distinctly a woman 67 yrs. of age, weight 215 lbs. Our diagnosis in February was pulmonary infarct and a possible carcinoma of the rectum. Before she left the hospital the intern and I made a proctoscopic examination. She was a fine specimen to demonstrate to the intern as she did not mind the examination. We had a "grand time" and our only regret was that the instrument was not longer than 25 c.m. When we concluded we had seen and felt nothing. Five months later the patient developed what seemed to be appendicitis. In closing the abdomen a peculiar area was seen in the peritoneum. Biopsy—pathological report—adenocarcinoma. On postmortem examination extensive metastases were found in the liver, transverse colon, etc. Knowing the common fact that the greater the metastases the smaller the primary lesion, we searched the rectum. I quote a portion of the pathologists report: "along the right wall of the rectum 7 c.m. above the anus a dense firm mass 4x4x4 c.m. Yellow streaks run from the rectum into the growth; mucosa not ulcerated, etc." We had missed this mass in the immense mass of fat.

To make a routine proctoscopic examination is of course beside the point. My contention is that a good proctoscopic examination, when indicated, can be made in your office.

1425 W. Cuyler Ave.

REMISSIONS IN A CASE OF SCHIZOPHRENIA BY TWO UNUSUAL MECHANISMS

JOHN J. MADDEN, M. D., and NATHAN K. RICKLES, M. D.

CHICAGO

We present a case of schizophrenia with two remissions brought about by rather unusual circumstances. M. M., age 45, married, male, was first admitted as a patient to the Cook County Psychopathic Hospital on November 10, 1937. He was restless and threatening and stated for

everyone to get ready to go to Heaven. He had become very religious during the past five years and changed his church affiliation on two occasions. On November 14, 1937, while being given a tub bath, he was accidentally burned with resultant second degree rather extensive burn over his back. His temperature rose to 103 degrees on the second day and remained elevated for a period of ten days. It was noted that during this period his mental condition changed and he began to show considerable improvement. He was discharged December 23, 1937, as definitely improved.

He returned to his former employment for a month and then began to develop vague symptoms of a somatic nature, followed by delusions of being poisoned and once again started to have his bizarre religious ideas.

He was readmitted to the Cook County Psychopathic Hospital on March 31, 1938. He was acutely disturbed, was hearing voices and complained of his body being full of bugs. Metrazol shock therapy was started. A total of eight convulsive doses were administered. He rapidly improved and was discharged May 19, 1938. At this time the patient and family declared he was practically like his personality before the onset of his sickness. We call attention to this case because of the two different agents that brought about remissions and of the possibilities of some element elaborated in the body due to the burn which might have had direct therapeutic effect. We are at present working on this problem.

FIFTY-SIX PER CENT OF OUR PEOPLE HAVE THE DEFECTIVE HEARING

According to a press release, United States Public Health Service, only about half of the adult population of the nation claims to have normal hearing according to random samplings made in connection with recent United States Public Health Service surveys.

Findings announced today also revealed that only 56 per cent of these people who think they hear perfectly passed audiometer tests for normal hearing. Many failed to hear the very high and the very low tones.

Wide differences were found among men and women. In general women detect the high tones better but fail to hear sounds in the lower range. Men do well in detecting low tones but frequently show loss of hearing for high pitched sounds.

The investigation was conducted as a phase of the National Health Survey, and in cooperation with prominent ear specialists. Hearing tests and ear, nose and

throat examinations were given to about 9,000 persons drawn at random from the population in twelve cities.

The most frequent defect among these persons who erroneously believed their hearing to be normal consists in loss of hearing above the range of sounds most commonly used in human speech, that is, above an audiofrequency level of 3,000 cycles per second.

It was demonstrated through tests with bone conduction vibrators, placed on the mastoid bones, that these losses for high tones are due to primary degeneration of the acoustic nerve. This degeneration results from infectious processes associated with certain systemic diseases—such as scarlet fever, meningitis, diphtheria, influenza, and the like—as well as from local infections of the middle ear (otitis media). The common head cold is a frequent cause of these middle ear infections.

The study of hearing loss among persons having noticeable impairments of hearing for speech reveals many new facts. Loss of hearing due to congestion and lesions of tissue in the middle ear, without accompanying injury to the acoustic nerve, is found to be characteristic of deafness among children of public school age. Practically all deafness among persons over 25 years of age involves some degree of nerve degeneration. This degeneration is more localized among males and rather widely distributed throughout the ear among females.

In terms of hearing loss as measured with the audiometer, females show typically a rather uniform loss of hearing for all tones from about 100 cycles up to 8,000 cycles. Males, on the other hand, show characteristically greater losses than females for tones higher in pitch than 2,000 cycles. Males also show relatively less loss of hearing than females for tones that are lower in pitch than 1,000 cycles.

Knowledge of this consistent difference between males and females with impaired hearing is of considerable importance to the manufacturer of hearing aids. A much different type of instrument is required in most cases for males and females. In case of males, hearing aids should typically amplify sounds above 1,000 cycles relatively more than those below this frequency level. For females, hearing aids should amplify sounds in a fairly uniform ratio through the frequency range from 200 to 4,000 cycles. Instruments now available on the market do not take these facts into account, directors of the hearing study said.

BABIES BORN IN 1938 HAVE A SIXTY-TWO-YEAR LEASE ON LIFE

According to a release, United States Public Health Service, the total "life expectancy at birth" for the United States last year, according to computations based on certain estimated factors and released today by the United States Public Health Service, was 62 years. This figure compares with an expectancy of 60.26 in 1931, and 60.9 as estimated for 1937.

While still somewhat below the biblical premise of "three score and ten," the life expectancy now is almost twice as great as it was 100 years ago. For the 7

years since 1931 a gain in expectancy of 1.74 years is indicated, while a gain of 1.1 years is shown in 1938 over 1937.

The expectation of life at birth, it is explained, "is the average age at death of a hypothetical group of persons each of whom is subject to the same age specific mortality rates throughout his life time."

The important factors in the computation of life tables are these age specific death rates, which are based upon the age distribution of the population and on the deaths by ages. Apparently the actual average age at death of persons in the general population should be the life expectancy at birth. This is not likely to be true, however, since the age distribution of the living population will probably not be identical with that of the stationary population which is a function of the computed expectancy.

Marriages

WILLARD N. BLOME, Oak Park, Ill., to Miss Mabel Lillian Wingard of Chicago, February 11.

Personals

Dr. George F. O'Brien has been invited to give a paper on Pneumonia before the Hancock County Medical Society, March 6.

Drs. Wayne W. Fox, Harold A. Lindberg and Ford K. Hick presented a symposium on Pneumonia before the Champaign County Medical Society at Champaign on March 9.

Dr. Heyworth N. Sanford will speak on "Jaundice of the New Born," and "Some Observations on Disturbances of Blood Coagulation" at the spring clinics of the Saint Joseph Clinical Society, St. Joseph, Missouri, March 28 and 29.

Dr. Theodore Cornbleet addressed the Maimonides Medical Society of Detroit on March 14.

Dr. Sidney A. Portis is to be a guest speaker at the Louisiana State Medical Society on April 24, 1939, at Alexandria, Louisiana. His subject will be "Hepatitis—Etiology, Diagnosis, and Treatment."

Dr. Ralph Reis has been invited to give a talk on "Medical Complications of Pregnancy" before the doctors of Shelby and Christian Counties on March 20.

Dr. Cleveland J. White has been invited by the Idaho State Medical Association to give a series of lectures at Pocatello, Sun Valley, Twin Falls, Boise, Lewiston and Coeur d'Alene during the week of March 6 to 11.

Dr. Eric Oldberg spoke before the St. Clair County Medical Society in East St. Louis March 2, on the subject, "Pituitary Tumors."

Dr. O. E. Van Alyea addressed the Michiana Eye, Ear, Nose and Throat Society at South Bend, Indiana, March 13. His subject was "Irrigation of the Frontal and Maxillary Sinuses."

Dr. C. Leon Wilson gave obstetrical lectures in Prairie View, Texas, March 13-16, 1939. He will give lectures in Los Angeles, California, March 20-23, 1939. These will be given before Post Graduate Assemblies in both cities.

Dr. Robert H. Herbst was the guest speaker in Urology at the annual Spring meeting of the Dallas Southern Clinical Society, held in Dallas, Texas, March 13 to 17.

Dr. John A. Bigler has been invited to talk on "The Uses of Sulfanilamide in Infectious Diseases in Childhood" before the Ryburn Hospital Staff of Ottawa on March 29.

Dr. Herman M. Soloway, Venereal Control Officer of the State of Illinois, addressed the Jefferson County Medical Society on March 16 on "The Control of Syphilis and Gonorrhea in the State of Illinois."

Dr. Clifford J. Barborka gave papers on "Diagnosis and Treatment of Non-Malignant Ulcers of the Stomach" and "Medical Management of Diseases of the Gall Bladder" before the Iowa Post-Graduate Course at Mason City, Iowa, March 7.

Dr. Chester C. Guy has been invited to give a talk on "Cancer" before the Gage Park Woman's Club on March 14.

Dr. Philip Smith was invited to give a paper on "Obstetric Hemorrhages" before the Bureau County Medical Society at Spring Valley on March 14.

Dr. Henry Buxbaum is scheduled to give a paper on "Indications and Technique of Forceps Delivery," before the Fulton County Medical Society at Canton, March 15.

Dr. Claude N. Lambert has been invited to address the Stephenson County Medical Society at Freeport, March 16, subject, "Fractures of the Hip."

Dr. Channing W. Barrett addressed the Lee County Medical Society on March 16, subject, "The Many Phases of Fibroids of the Uterus."

Dr. Harry M. Hedge is scheduled to address the Effingham County Medical Society at Effingham on "Diseases of the Skin as Seen by the General Practitioner," March 22.

Dr. L. C. Gatewood has been invited to speak on "Jaundice—Its Causation and Clinical Study" before the Will-Grundy County Medical Society at Joliet, March 24.

Dr. Samuel M. Feinberg presented a lecture on "Mold Allergy" to the Michigan Allergy Society at Ann Arbor, Michigan, on March 16.

Dr. John M. Berger discussed "Acute Intestinal Obstruction, Diagnosis and Conservative Management" before the West Side Branch February 16, and Dr. George F. Thompson, the surgical treatment.

Among others, Dr. J. Arnold Bargaen, Rochester, Minn., addressed the Jackson Park Branch February 16 on "Constipation: The Mechanism of Production and Management."

At a meeting of the Madison County Medical Society in Edwardsville February 3, Dr. Charles J. Drucek, Chicago, among others, spoke on "Pruritus Ani."

At a meeting of the Douglas Park Branch February 21 Dr. Harry A. Gussin spoke on "Proctology in General Practice."

Dr. William D. Stroud, Philadelphia, discussed "Coronary Disease Including Angina Pectoris" at the annual meeting of the Chicago Heart Association January 31.

Dr. Lewis Gregory Cole, New York, discussed "Dyspnea of Silicosis: What Causes It?" before the Chicago Roentgen Society February 16.

A symposium on genito-urinary diseases dealing with infections of the upper urinary tract was presented before the Calumet Branch February 17, by Drs. William J. Baker, Andrew J. Sullivan and Dorrin F. Rudnick.

Dr. Nathan S. Davis III discussed "Arteriosclerotic Heart Disease" before the Southern Cook County Branch February 21.

Dr. Raymond A. Tearnan, Decatur, discussed "Ovarian Dysfunction and Treatment" before the Franklin County Medical Society in Benton January 26.

At a meeting of the Douglas County Medical

Society in Villa Grove January 21, Dr. Thomas B. Williamson, Mount Vernon, spoke on "The Significance of Prenatal Care."

A symposium on fractures of the neck of the femur was presented before the Sangamon County Medical Society, January 5, by Drs. Frank A. Norris, Ivan E. Brouse and Carl Black, all of Jacksonville.

Dr. James Duffy Hancock, Louisville, Ky., discussed "Abdominal Tumors in Children, Surgical Treatment" before the St. Clair County Medical Society in East St. Louis January 5.

Among others, Ludwig R. Kuhn, Ph.D., presented "Some Observations on Experimental Cryptococcus Infection" before the Chicago Pathological Society February 13.

Dr. Louis E. Prickman, Rochester, Minn., discussed "Asthma and the Stenosed Bronchus Syndrome" before the Chicago Society of Allergy, February 20.

The Chicago Ophthalmological Society was addressed, February 20, by Drs. Sanford R. Gifford and Gilbert H. Marquardt among others, on "Central Angiospastic Retinopathy."

Dr. Ralph Hess Kunstadter presented the inaugural thesis before the Chicago Pediatric Society, February 21, on "The Waterhouse-Friedrichsen Syndrome."

The speakers before the Chicago Neurological Society, February 16, included Dr. Mark A. Foster, Madison, Wis., on "Acute Encephalomyelitis, Equine or Avian?" and Drs. Harry A. Paskind and Meyer Brown, "Constitutional Differences Between Deteriorated and Nondeteriorated Patients with Epilepsy: IV. Dactylographic Studies"

A symposium on physiologic action of insulin and metrazol as used in shock therapy was presented before the Illinois Psychiatric Society, Chicago, January 5, by Drs. Samuel Soskin, Ernst Gellhorn and Ralph W. Gerard. Dr. H. Douglas Singer delivered his presidential address on "Relationship Between Personality and Psychosis."

Dr. Irving S. Cutter addressed the Northwest Branch of the Chicago Medical Society March 17 at the Norwegian-American Hospital on "State Medicine—Present Trends in This Country." Discussion was opened by Drs. Morris Fishbein, Editor THE JOURNAL A. M. A., Rollo K. Packard and Nathan S. Davis III.

Dr. Leo M. Davidoff, Brooklyn, lectured at Mount Sinai Hospital, January 19, on "Pneumo-Encephalography and the Appearance of the Normal and Pathological Encephalogram."

On April 12, Paul DeKruif, Ph.D., Holland, Mich., will speak at Mandel Hall of the University of Chicago, delivering the Arno Benedict Luckhardt Lecture of the Phi Beta Pi Fraternity under the title "Human Conservation."

Dr. Irvin Abell, Louisville, Ky., President, American Medical Association, lectured at the Chicago Woman's Club, February 22, under the auspices of the public health committee of the Chicago Woman's Club, the Chicago Medical Society and the Chicago chapter of the American College of Surgeons; his subject was "The Position of Medicine in Our Present Day Culture."

Twenty laboratories will be constructed by the WPA for the state department of health, according to a recent announcement. Subject to federal approval, the laboratories will be situated where facilities are inadequate and will not compete with or duplicate existing public or private laboratories. They will not be used for treatment, it was said.

Bradley M. Patten, Ph.D., professor and director of the department of anatomy, University of Michigan Medical School, Ann Arbor, will deliver the third Christian Fenger lecture of the Chicago Pathological Society and the Institute of Medicine of Chicago March 24 at the Palmer House. His subject will be "Microcinematographic and Electrocardiographic Study of the First Heart Beats and the Beginning of the Circulation in Living Embryos," illustrated with micromoving pictures and lantern slides.

A dinner will be held March 28 in honor of Dr. Carl Beck, formerly professor of surgery, Chicago College of Physicians and Surgeons, now the University of Illinois College of Medicine, in recognition of his seventy-fifth birthday and his completion of fifty years in the practice of medicine. A group of Dr. Beck's friends is sponsoring the dinner at the Stevens Hotel at 7 o'clock. A native of Milin, Austria, Dr. Beck took his degree in medicine at the Royal and Imperial University of Prague, 1889. He served as assistant in surgery and gynecology in the clinics at Prague, assisting first Professor Guesenbauer and later Dr. Schauta, gynecologists of

Vienna. He made several trips to America as steamer surgeon in 1889-1890, settling in Chicago in the latter year to follow the general practice of medicine. He founded the St. Anthony Hospital with the Sisters of Joliet. He is also a founder of the German Medical Society and the Bohemian Medical Society of Chicago. He is the author of "Principles of Surgery," 1905, and "The Crippled Hand and Arm," 1925, as well as of many articles in medical journals.

Ralph R. Ferguson spent the winter in Florida. The doctor recovered from his prolonged illness and resumed active practice nearly a year ago. His time during his vacation in Florida was spent playing "golf." He enjoyed an every day session and returned to Chicago March 15th. He enjoyed fully his much deserved vacation.

J. V. Fowler spent a mid-year vacation in Florida. Most of his time during vacation was spent playing "golf." The doctor's competitor in most of his "golf" contests was Dr. Ralph Ferguson. Both Doctors Fowler and Ferguson claim the honor of making the lowest score.

Edward H. Ochsner and Mrs. Ochsner are still sailing over the vast Pacific. Their first stop was at Hawaii, they crossed the Equator about February 10th and then sailed on to New Zealand by way of Suva. Both Doctor and Mrs. Ochsner are alert observers as well as keen students of nature. Their vast knowledge of men and affairs will enable them materially to enhance their previous store house of information.

News Notes

—The 24th Annual meeting of the American Association of Industrial Physicians and Surgeons with the American Conference on Occupational Diseases and Industrial Hygiene will be held at the Hotel Statler, Cleveland, Ohio, June 5, 6, 7, and 8, 1939. A program of timely interest and importance will be presented by speakers of outstanding experience in all of the medical and engineering problems involved in industrial health. A cordial invitation is extended to all whose interests bring them in contact with these problems. Information regarding hotel accommodations, etc., may be obtained from A. G. Park, Convention Manager, 540 North Michigan Avenue, Chicago.

—The Rockefeller Foundation has made a grant

of \$2,000 to continue for the year 1939 the studies in malaria conducted by William H. Taliaferro, Ph.D., chairman of the department of bacteriology and parasitology, and dean of the Division of Biological Sciences, University of Chicago. The foundation has supported the work of Dr. Taliaferro and his associates for a number of years. The studies are concerned with analysis of the mechanisms by which the body resists malarial infection and with the physiologic and genetic studies of the mosquitoes which transmit malaria and of malarial parasites.

—Clarence C. Little, Sc.D., director, American Society for the Control of Cancer and of the Roscoe Jackson Memorial Laboratory, Bar Harbor, Maine, will deliver the first Mary Redfield Plummer Memorial Cancer Lecture under the auspices of the cancer research committee of the Chicago Woman's Club March 29. His subject will be "Recent Advances in Cancer Research." The lecture is one in a series that has been sponsored for a number of years by the woman's club but was named in honor of Mrs. Plummer following her death last year. Mrs. Plummer was formerly parliamentarian of the club and one of the pioneer workers in cancer among club women.

—The general mortality rate for Chicago in 1938 dropped to an all time low of 9.7 deaths per thousand of population, a decrease of 6 per cent from the rate of 10.3 for 1937, according to a recent report. A new low point was established for infant mortality when thirty-four deaths of babies under 1 year of age per thousand live births were recorded; the maternal mortality rate dropped to 2.6 per thousand births, which, it was stated, was 25 per cent fewer deaths than in 1937. The city's birth rate was 14.3 per thousand of population, an increase over the rate for 1937, when it was 13.8. The total number of births was 51,500. The daily attendance at clinics throughout the city was 2,000, and more than 100,000 persons voluntarily took blood tests in the health department's campaign against syphilis.

—The clinical program committee of the venereal disease commission of the Chicago Medical Society has arranged to utilize the vast clinical material at the Municipal Hygiene Clinic, 27 East Twenty-Sixth Street, for presentation in the various phases of the subject of syphilis.

The first of a series of monthly programs will be held March 27. Dr. Alexander S. Hershfield, consultant, Municipal Social Hygiene Clinic, will deliver the first lecture on neurosyphilis and present cases. Drs. Hyman H. Goldstein, Chicago State Hospital, and Victor E. Gonda, clinical professor of psychiatry, Loyola University School of Medicine, will carry on the discussion. The meetings, which are free, will be in the nature of a graduate course, according to the Chicago Medical Society *Bulletin*.

The following resolution has been adopted by the Chicago Society of Allergy: The members of the Chicago Society of Allergy, partly from their own experience and partly from a survey of both the published and some of the unpublished experimental and clinical results of oral pollen therapy, believe that the evidence of beneficial effect is at present not sufficient to warrant the commercial promotion of material for oral pollen therapy. Because of their controversial and contradictory nature, the published results of oral pollen therapy are inadequate to justify the commercial promotion of such a product. In addition, our investigation indicates that many men who have used oral pollen therapy have failed to publish their work because of the unsatisfactory results obtained. We therefore urge that the commercial promotion of oral pollen therapy should be deferred in the interest of the public and of the general practitioner until further experimentation now in progress has been reported.

—WANTED: Back numbers of the JOURNAL. We have several requests from libraries for the March, 1937, issue. We have also many requests on file from universities and libraries for all numbers and volumes of the ILLINOIS MEDICAL JOURNAL issued previous to 1916. Communicate with us at 6221 Kenmore Avenue, Chicago, Illinois.

—The Gehrman Lectures for 1938-1939 will be delivered in the Medical and Dental College Laboratories Building, 1853 West Polk Street, Chicago, in Room No. 423, on April 12, 13 and 14, 1939, by Dr. Herbert C. Clark, Director, Gorgas Memorial Institute of Tropical and Preventive Medicine, Inc., Panama Canal Zone.

PROGRAM

April 12, Wednesday, 1 P.M.—“Malaria—Its Effect on Labor Efficiency in the Tropics.”

April 13, Thursday, 4 P.M.—“Amebiasis, Clinical and Non-Clinical.”

April 14, Friday, 4 P.M.—“Modern Factors Favoring Spread of Diseases.”

Deaths

EDWARD M. CATES, Wayne City, Ill.; Barnes Medical College, St. Louis, 1903; member of the Illinois State Medical Society; also a pharmacist; aged 69; died, Dec. 14, 1938, of pneumonia.

EDWARD BOWE, a Fellow A. M. A., Jacksonville, Ill.; Rush Medical College, Chicago, 1897; on the staffs of the Passavant Memorial Hospital and Our Savior's Hospital; former president and secretary of the Morgan County Medical Society; aged 65; died, Dec. 16, 1938, of myocarditis.

ADOLPH FALLER, a Fellow A. M. A., Chicago; Chicago Medical School, 1918; on the associate staff of the Evangelical Hospital; aged 61; died, Dec. 3, 1938, of bronchopneumonia.

FRANK P. HARVEY, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1900; aged 59; died, Dec. 7, 1938, in the Swedish Covenant Hospital of hypertension and arteriosclerosis.

EDWARD J. HIGGINS, Joliet, Ill.; Northwestern University Medical School, Chicago, 1901; member of the Illinois State Medical Society; city health officer; aged 67; died, Dec. 24, 1938, of coronary thrombosis.

WILLIAM SULLIVAN HOWELL, Winnebago, Ill.; Keokuk (Iowa) Medical College, 1898; aged 63; died, Dec. 16, 1938, in the Mercy Hospital, Chicago, of prostatic hypertrophy and urosepsis.

CHARLES W. KLINETOP, Chicago; Hering Medical College, Chicago, 1894; aged 74; died, Nov. 8, 1938, in Rancho Los Amigos, Calif., of myocarditis and arteriosclerosis.

ROBERT E. LA RUE, a Fellow A. M. A., Erie, Ill.; Louisville (Ky.) Medical College, 1894; aged 64; died suddenly, Dec. 6, 1938, of coronary sclerosis and myocarditis.

JOSEPH CONRAD PIETROSKI, Cicero, Ill.; Chicago College of Medicine and Surgery, 1916; aged 49; died, Dec. 24, 1938, in St. Mary of Nazareth Hospital, Chicago, of coronary thrombosis.

JOHN CHARLES QUITMEYER, Chicago; Chicago College of Medicine and Surgery, 1915; aged 48; was killed, Dec. 2, 1938, when he was struck by a truck.

JAMES C. STEWART, Anna, Ill.; St. Louis College of Physicians and Surgeons, 1891; member of the Illinois State Medical Society and the American Psychiatric Association; formerly managing officer of the Alton (Ill.) State Hospital; aged 72; died, Dec. 2, 1938, of cerebral hemorrhage.

WILLIAM ARTHUR TRADER, a Fellow A. M. A., Quincy, Ill.; Chicago College of Medicine and Surgery, 1909; aged 52; on the staff of St. Mary's Hospital where he died, Dec. 23, 1938, of multiple myelomas and chronic myocarditis.

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BUYERS INDEX

ABDOMINAL SUPPORTERS

S. H. Camp & Co., Jackson, Mich..... 10

FOODS

Coca-Cola Co., Atlanta, Ga..... 27

Corn Products Refining Co., New York City..... 11

R. B. Davis Co., Hoboken, N. J..... 8

Knox Gelatine Laboratories, Johnstown, N. Y.....

Mead, Johnson & Co., Evansville, Ind..... 17

S. M. A. Corporation, Cleveland..... 7

FINANCIAL AND INSURANCE

Employers Mutuals, Wausan, Wis..... 12

Medical Protective Co., Fort Wayne, Ind..... 26

Physicians Casualty Co., Omaha, Neb..... 27

HOSPITALS

Stokes Hospital, Louisville, Ky..... 23

Summit Hospital, Oconomowoc, Wis..... 24

INSTITUTE

Chicago Tumor Institute, 21 West Elm St..... 27

PHARMACEUTICALS

Alba Pharmaceutical Co., 80 Varick St., New York City... ..

American Agency, French Vichy, Brooklyn, N. Y.....

American Can Co., 230 Park Ave., New York City..... 3

Armour & Co., Chicago.....

Ernst Bischoff, Ivoryton, Conn.....

Bovine Company, Chicago..... 28

Bristol-Myers Co., New York.....

Carrick, G. W., Co., 20 Mt. Pleasant Ave., Newark, N. J. 24

Ciba Company, Cedar and Washington St., New York City... ..

Crookes Laboratories, New York City.....

Denver Chemical Co..... 29

E. Fougera & Co.....

El Paso Gateway Club..... 20

Gold Pharmacal Co., New York City..... 26

Harrower Laboratory 25

Hoffman-LaRoche, Inc., Nutley, N. J..... 18

Hynson, Westcott & Dunning, Charles and Chase Sts.,

Baltimore 27

Lederle Laboratories, 30 Rockefeller Plaza, New York... 30, 31

Lilly, Eli, & Co., Indianapolis, Ind..... 16

Morris, Philip, & Co., 19 Fifth Ave., New York.....

Nutrition Research Laboratories, 332 S. Michigan Ave.,

Chicago

Parke, Davis & Co., Detroit, Mich..... 5

Petrolagar Laboratories, 8134 McCormick Blvd., Chicago.. 4

Reed & Carnrick, Jersey City, N. J.....

Roche Organon, Inc., Nutley, N. J..... 2

Schering & Glatz, Inc., New York City.....

G. D. Searle & Co., 4737 Ravenswood Ave., Chicago.....

Sharp & Dolme, 111 N. Canal St., Chicago..... 6

E. R. Squibb & Sons, New York..... 9

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Wm. R. Warner & Co., 113 W. 118th St., New York City 14

Winthrop Chemical Co., 170 Varick St., New York City... 13

Zemmer Co., Pittsburgh, Pa..... 21

SANATORIA AND SANITARIA

Edward Sanatorium, Naperville,, Ill..... 25

Kenilworth Sanitarium, Kenilworth, Ill..... 21

Michell Farm Sanatorium, Peoria, Ill..... 32

Milwaukee Sanitarium, Wauwatosa, Wis.....,Front Cover

Norbury Sanitarium, Jacksonville, Ill..... 21

North Shore Health Resort, Winnetka..... 25

Rogers Memorial Sanitarium, Oconomowoc, Wis..... 32

Waukesha Springs Sanitarium, Waukesha, Wis..... 21

Weirick's Sanitarium, Elgin, Ill..... 23

RADIUM

Physicians Radium Assn., 53 E. Washington St., Chicago.. 23

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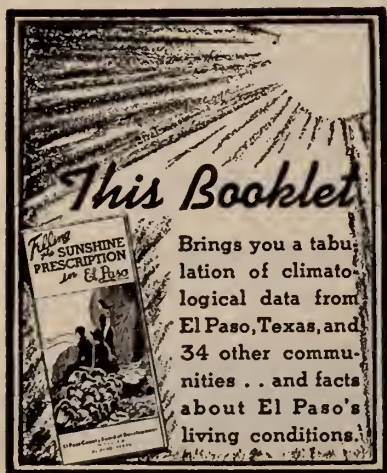
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CONTENTS—Continued

Hypothermia re Induced Hyperinsulinism, Alfred Paul Bay, M. D., Western Springs, Ill.....	369
Remissions re Schizophrenia. John J. Madden, M. D., and Nathan K. Rickles, M. D., Chicago.....	373
Study of Patients' Heads. J. W. Davis, M. D., Anna, Ill.	372
Proctoscopic Examination. Everett B. Williams, M. D.....	374

EDITORIALS

Enslave the Medical Profession	285
Feeble Mindedness	285
Control of Cancer	287
Minnesota Dean	288
Public Health Bills	288
1938 Low Mortality Rate	289
Suggestions on Preparing Copy	294
Medical Economics	296

CORRESPONDENCE

Professions' Apathy. Fred C. Warnshuis	297
Veterans' Service Committee Dinner	298
Activities of Women's Auxiliary	299
University of Illinois Alumni Meeting.....	299
State Maternal Welfare Committee	299
Ten Cardinal Principles	300
Hall of Health	301
Illinois Tuberculosis Association Annual Meeting.....	301
Sulfapyridine	303
Radium Number of Mississippi Valley Medical Journal.....	303
U. S. Civil Service Examination.....	303
Pneumonia Serum and Laboratory Typing.....	306
Post Graduate Instruction in Germany.....	308
Picturesque Rockford	309
Rockford, Illinois	312
Program 99th Annual Meeting.....	313
Marriages	376
Personals	376
News Notes	379
Deaths	380

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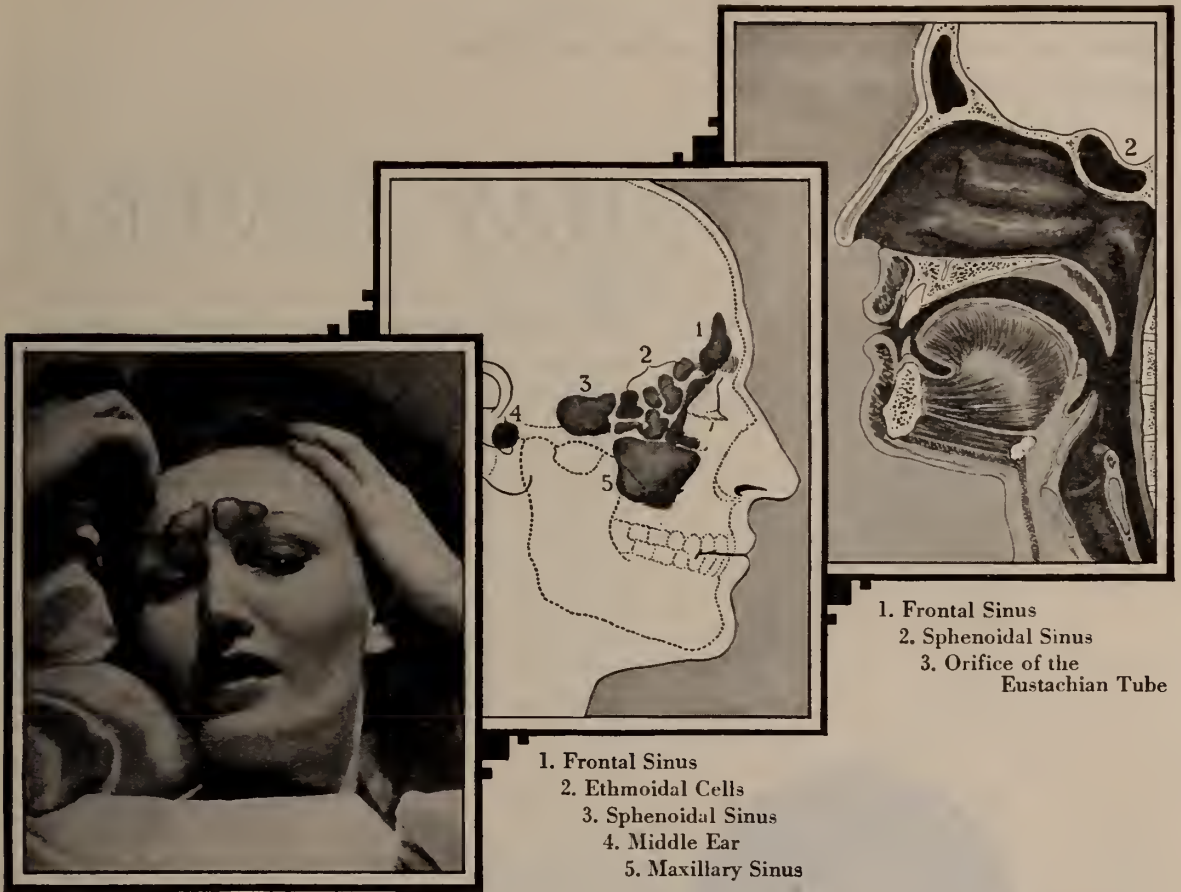
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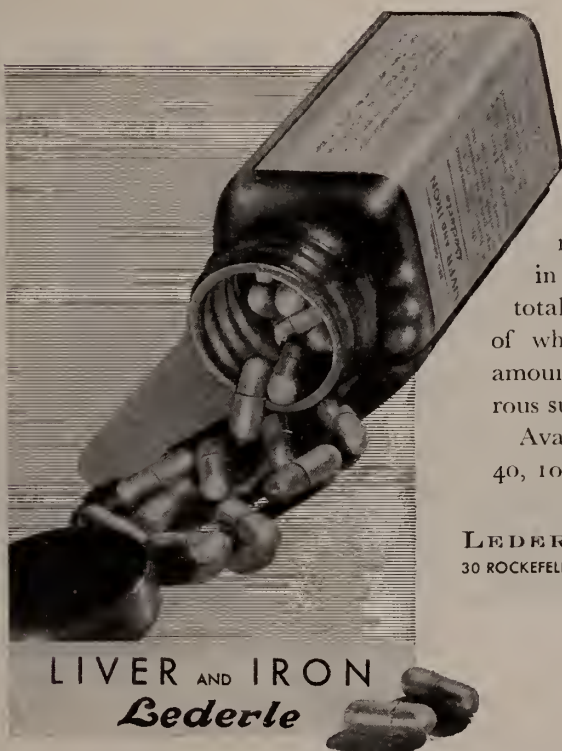
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CONTENTS:

Editorials (For Titles See Extended Table of Contents) 381

ORIGINAL ARTICLES

Newer Treatments of Dementia Praecox. *Doctors D. Louis Steinburg, Gert Heilbrunn and Erich Liebert, Elgin, Illinois*..... 405
Medical Care for All People. *R. K. Packard, M. D., Chicago*..... 410
Importance of Business Meeting. *R. T. Pettit, M. D. Ottawa, Ill.*..... 413
New Deal in Medicine. *Logan Clendening, M. D., Kansas City, Mo.*..... 416
Suppository Medication. *Leslie E. Borik, M. D., Waukegan, Ill.*..... 419

Postgraduate Medical Education for Illinois. *Frank Garm Norbury, M. D., Jacksonville, Ill.*..... 422
Treatment of Weak Feet. *James Graham, M. D., Springfield, Ill.*..... 425
Types of Skin Grafts. *Paul W. Greeley, M. D., Chicago*..... 436
Chronic Peritonitis. *Thom B. Bondus, M. D., Chicago*..... 442
Picrotol Re Chronic Otitis. *V. R. Vanstanc, M. D., Chicago*..... 444
Psychoses in Children. *Irene C. Sherman, M. D., Chicago*..... 446

(Continued on page 24)

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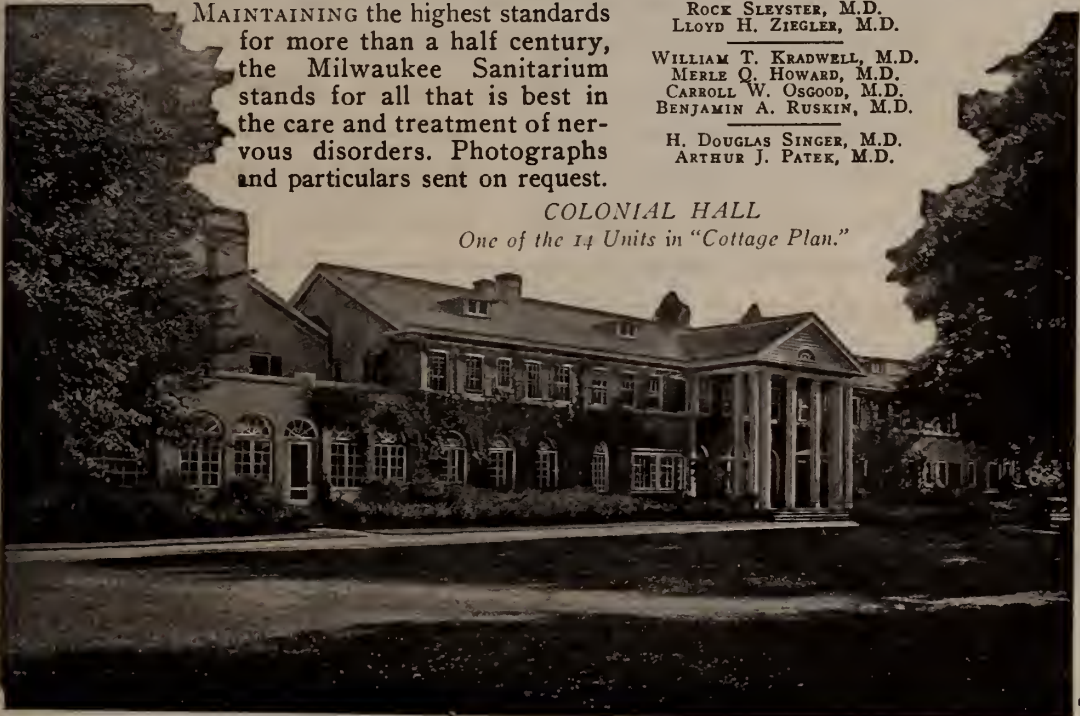
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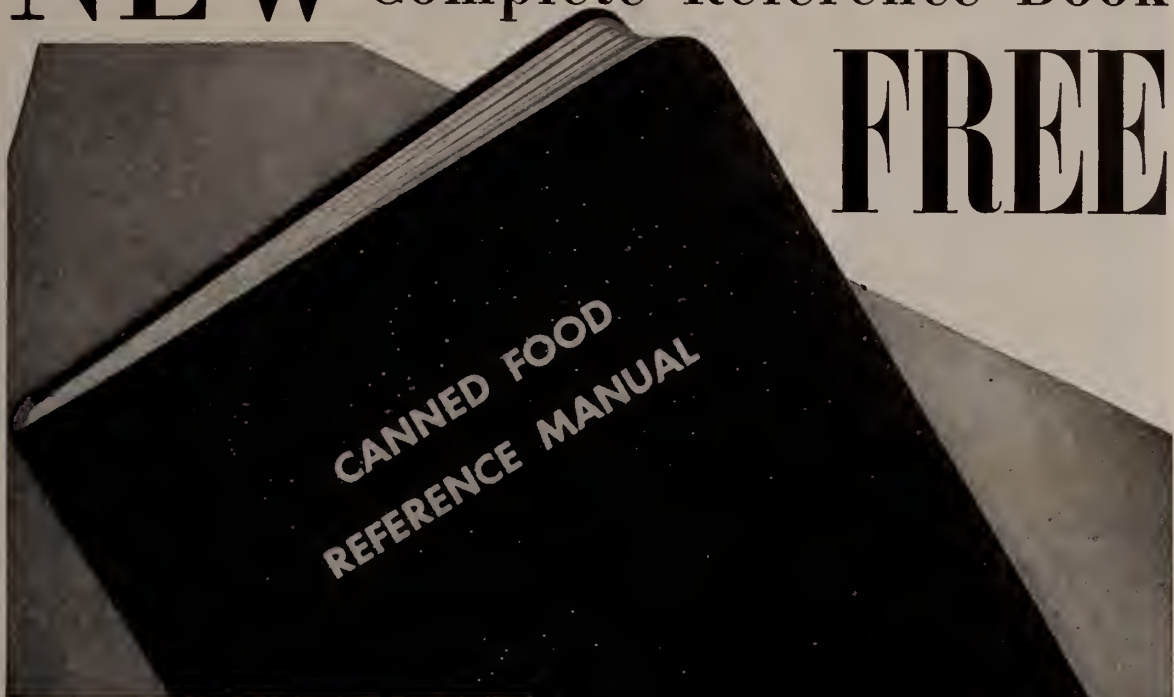


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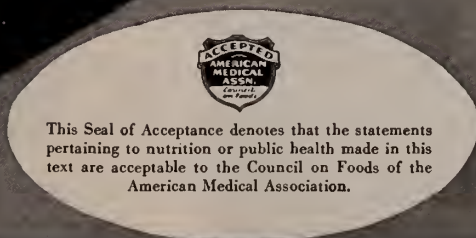


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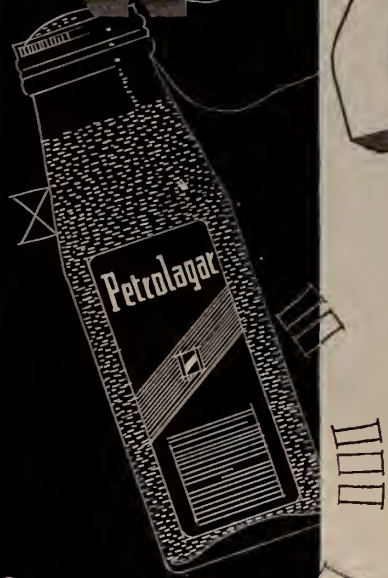
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The vital year for the healthy development of bone and tissue structure!

S.M.A. is nutritionally correct. Not only is it essentially similar to human milk in percentages of protein, fat, carbohydrate and ash, but *equally important from a nutritional standpoint*, it is also similar in biological factors, especially in chemical constants of the fat and in physical properties.*

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"Proceedings of the Society for Experimental Biology and Medicine", 40:157, 1939.

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The gelatine used in this study was plain Knox Gelatine (U.S.P.) which assays 85% protein and which should not be confused either with inferior grades of gelatine or with sugar-laden dessert powders, for these latter products will not achieve the desired effects. When you desire pure U.S.P. Gelatine, be sure to specify KNOX. Your hospital can get it on order.

EXTRA ENERGY FORMULA

Empty one envelope of Knox Gelatine in a glass three-quarters filled with cold water, fruit juice or milk. Let gelatine settle to the bottom of the glass, then stir briskly and drink immediately. Take four times a day for two weeks, then reduce to two envelopes a day. (May be taken before or after meals.)

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Distressing Menopausal Symptoms

NEED NOT BE BORNE

THE LIST of clinical papers attesting the clinical value of estrogenic substance in alleviating the vasomotor symptoms of the menopause is very substantial in number. One of the latest contributions is that of Hawkinson.¹

Summarizing the experience of six years, during which period 1000 patients with the menopausal syndrome were observed, he writes: "The percentage of women having distressing symptoms during the climacteric has been greatly underestimated. The tradition that they must be borne is unsound, for the administration of estrogenic preparations is rational and relieves the symptoms in a great majority of cases."

He further states: "Treatment should be instituted as soon as symptoms appear.

Dosage must be adequate and treatment should be continued until the patient remains free from symptoms without therapy. Higher doses are usually required in patients with artificial menopause."

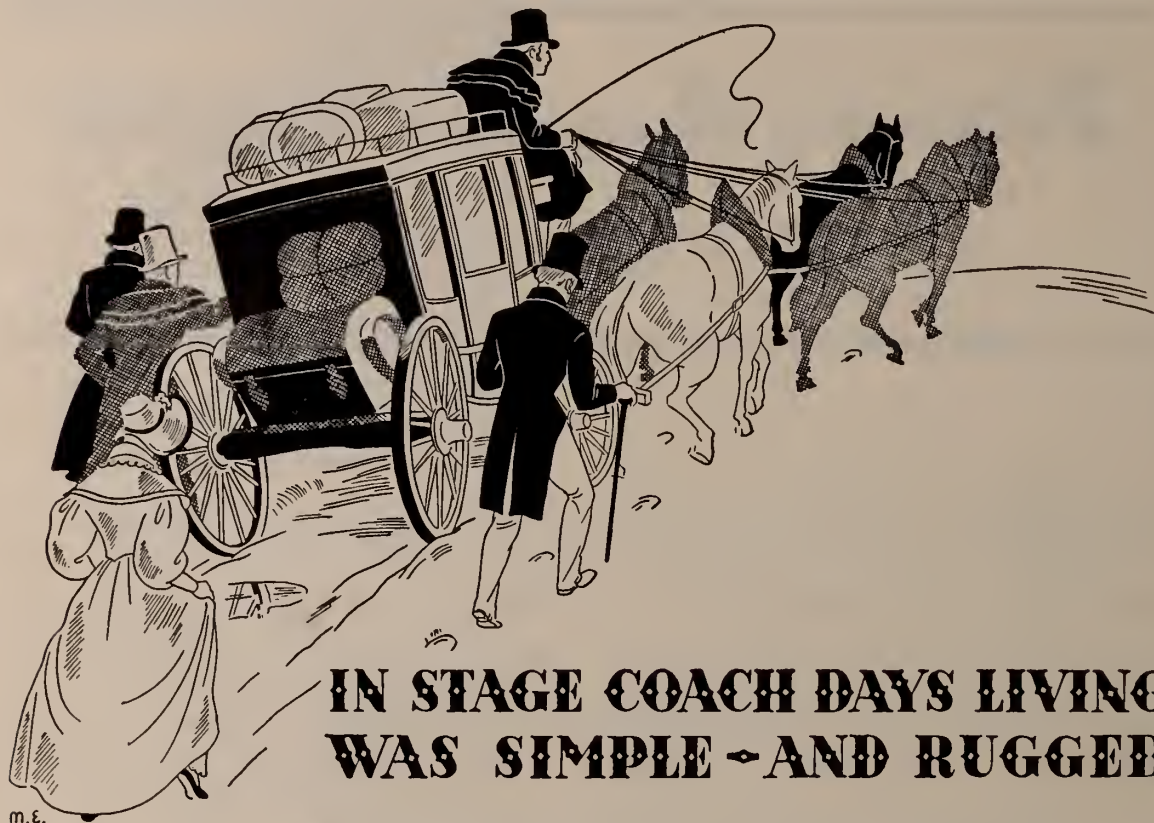
Amniotin is a highly purified preparation of naturally occurring estrogenic substances. It is a council-accepted product. It is available in 1-cc. ampuls, containing 2000, 5000, 10,000, and 20,000 I. U., and in Capsules and Pessaries containing 1000 and 2000 I. U. Amniotin also has been widely and successfully used (by vaginal administration) in treating gonorrheal vaginitis in children.

¹ Hawkinson, L. F.: *J. A. M. A.* 111:390, July 30, 1938.

For literature address the Professional Service Department, 745 Fifth Avenue, New York, N. Y.



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X-ray taken on Aug. 5, 1938. Note haziness of joint space and obscure markings.



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...Archimathaeus was satisfied with euphorbia and barley boiled in water for the treatment of constipation. Magister Ferrarius found mirobolanum good.

But times have changed. Experience has wrought the change. And the change came from dissatisfaction, ever in search for the better, the more effective, the more satisfying.

Many physicians have found the answer to their quest in Agarol. This good mineral oil and agar emulsion with phenolphthalein softens the intestinal contents, lubricates the channel of their passage and gently stimulates peristaltic activity. It combines effectiveness with exceptional palatability.

Why should you try Agarol? Because it satisfies the demands of modern medicine for a bowel evacuant and a therapeutic measure for the treatment of habitual constipation. Send for a trial supply. See how Agarol compares.

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AGAROL

Agarol is supplied in bottles of 6, 10 and 16 ounces. Adult dose, 1 tablespoonful. Children, 2 teaspoonfuls.

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ILLINOIS MEDICAL JOURNAL

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THE ILLINOIS STATE MEDICAL SOCIETY

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ONLY THE HOUSE OF DELEGATES SPEAKS OFFICIALLY FOR THE AMERICAN MEDICAL ASSOCIATION

The American Medical Association is a one hundred per cent. democratic institution and does represent the opinion of the rank and file of the physicians of Illinois and of the United States and does hold the complete confidence of its 112,000 members. It is high time the government officials, lay organizations and endowed foundations realize that the one and only group that can speak for American medicine officially is the House of Delegates of the American Medical Association.

EVALUATING THE SOCIAL SECURITY BILL, OR "THE WAGNER BILL"

The third and supreme achievement in the subtle and adroit campaign to do all that can be done to destroy Americanism and substitute communism is the National Health Bill introduced to Congress on February 28, 1939, by Senator Wagner.

This supremacy lies in the fact that this bill from a health and welfare viewpoint is the most dangerous piece of legislation ever offered to the Congress of the United States!

Even the N.R.A., and the National Labor Relations Act,—each of which had Senator Wagner as its godfather—lack the especially perilous qualities of the Wagner National Health Bill. At one with this bill in its utter un-Americanism are the Thomas Education Bill and the new instrumentality of Federal Court Consent Decrees.

This National Health Bill of Senator Wagner's does not create nor provide for any new federal agency, but it does carry an unregulated grant of power, and authorization of unlimited expenditure.

In fact the introduction to Congress of the Wagner National Health Act has created a fresh and menacing emergency not only to the rights of the free American both individual and collec-

tive, but to the general public welfare in that this National Health Bill holds inherent capacity to completely destroy the rights and the abilities, and the scientific competencies of the practice of ethical medicine.

This bill is the first step towards the installation of a large scale federal medical and health program, that so-called "National Health Program," recommended by the Technical Committee on Medical Care of the Roosevelt Interdepartmental Committee to Co-ordinate Health and Welfare Activities of the Federal Government. This Wagner Bill proposes to amend and supplement provisions of the Social Security Act by providing for considerable expansion of various services now provided under the Social Security Act and for the establishment of *additional wide-sweeping health and medical activities under the supervision and control of the Federal Government*.

The medical profession as a scientifically trained unit is overlooked completely in the power of control. Politics and not science control government. The result is clearly to be seen.

Covered by the Wagner bill are these subjects of activity:

1. Maternal and child health services.
2. Services for crippled children.
3. Administration of grants to states for maternal and child welfare.
4. Public health work.
5. Grants to states for hospitals and health centers.
6. Grants to states for medical care.
7. Grants to states for temporary disability compensation.
8. Rules for the determination of the financial status of states.

All in all it is a pretty clear program for the regimentation of once free America.

The President appointed in 1935 his Interdepartmental Committee to Co-ordinate Health and Welfare Activities. Their recommendations were considered at the National Health Conference in June, 1938, and were submitted to Congress in President Roosevelt's special message on January 23, 1939. On February 28 the National Health Bill was submitted by Senator Wagner.

There is not space here to reproduce the bill in its entirety and even if there were, the average physician considers himself too busy a man to wade through offered legislation. That is the

pity of it, and the politician's profit. Any one who studies the Wagner Bill well, soon realizes that for all of its vaguity and weakness that it still is able to, and would, achieve these six points.

1. Establish even greater concentration of power and authority over public health and medical activities in Washington than at present, and would virtually result in complete domination of these activities by the Federal Government.

2. Authorizes the expenditure of enormous sums by the Federal Government before the need for such expenditures has been proved and at a time when the financial condition of the country calls for economy in government rather than extravagance and expenditures for unnecessary activities.

3. Provides for the dispensing of public funds by the Federal Government to the various states on a matching basis. This policy is nothing more nor less than polite coercion and gives the Federal Government practically complete control over the activities being financed in this manner. At the present time, practically every state in the union is confronted with serious financial problems and is finding it difficult to obtain adequate funds for financing necessary governmental functions. No state at this time should be coerced into undertaking activities which are not absolutely essential.

4. Is so vague, with respect to the powers and duties of the various agencies given administrative control and as to how the large sums of money appropriated would be used, that little or no control is placed over administrative agencies and such money undoubtedly could be used by them for almost every conceivable kind of activity in the fields of public health and medical care.

5. Although the Wagner Bill does not establish a system of compulsory health insurance nor any specific plan of medical care for the public generally, it encourages the establishment of government-controlled programs of providing medical care on a state-wide basis by providing for the allocation of Federal funds to the various states where state plans are already or may be formulated with the approval of the Social Security Board.

6. Is nothing more nor less than an initial step toward a gigantic system of federalized medicine, covering practically every part of the fields of public health activities and medical care. Pro-

ponents of this proposed legislation point to the fact that the total expenditures, authorized for the first year should the act become effective, would amount to only approximately \$98,000,000, *but neglect to emphasize that such expenditures would increase many fold during the next two or three years and that, during subsequent years, there would be practically no limitation on the costs of the various activities covered by the bill.* Based on figures supplied by proponents of the bill, it has been estimated that the annual cost to the Federal Government of financing this extensive program within a few years would amount to between \$850,000,000 and \$1,000,000,000. Should that part of the proposal relating to general medical care be expanded, as proponents advocate, to include a large portion of the population, it is conceivable that the annual cost of this part of the program alone would approximate three to four billions of dollars annually.

Further it would violate sound economic and governmental principles, and would retard, rather than enhance efficient public health work.

And "Under the guise of a humanitarian measure, it puts the Federal Government far into the field of medical care from which it will never retreat. Using Federal and State funds it will set up government hospitals and a vast system of tax-supported medical care that may, in the end, undermine and drive out of existence all private and church hospitals and the private practice of medicine."

Having discovered that this Wagner Bill is:

1. Economically unsound and would add an enormous amount to the already strained financial structure of the Federal Government;
2. Vague and indefinite to such a degree that it would provide almost blanket authority to Federal agencies charged with administrative details;
3. Produce practically complete domination by the Federal Government over state and local activities;
4. Is an opening wedge to the creation of a huge Federal and politically-controlled public health and medical program;
5. Would encourage extravagance and inefficiency in the fields of public health and medical care, and thus would add tremendously to the tax burden of all the people and would not be beneficial to those persons designated as ultimate beneficiaries.

It is time to consider the bill in relation to its possible tangents. That is, its importance as related to enabling acts—passed in State Legislatures.

Already such an act has been introduced in the New York Assembly by Aaron Goldstein that puts teeth into the Wagner act and shows how this act can bite into the American people.

The purpose of the Goldstein bill—and it will prove to be the parent of many a "like father like child" piece of legislation is stated as,—

"It shall be the objective and ultimate goal of the department to improve and maintain the health of the people of the state and to RENDER FREE OF CHARGE, *under rules and regulations to be prescribed by the department*, all medical, surgical, dental, nursing care and treatment and all other services and facilities known to science and designed or adapted for use in all cases of sickness, accidents, and in childbirth, to and for residents of the state, including free transportation, to and from hospitals, maintenance in hospitals, the furnishing and supply ing without cost of medicines, drugs, and all medical, surgical, dental and pharmaceutical supplies and appliances required or deemed advantageous for the care, treatment, recovery and rehabilitation of a sick or injured person."

To see that all this is done the Goldstein bill also calls for the appointment of a Commissioner of Public Health at a salary per annum of \$15,000. Three deputies, \$12,000. It sets up 16 administrative divisions and establishes these salary scales:

Internes per annum	\$ 600-	\$ 1,200
Junior Physicians and Dentists	2,000-	2,750
Assistant Physicians	3,000-	3,750
Associate	4,000-	4,750
Senior	5,000-	6,000
Specialists and Consultants	7,000-	10,000

AND ALL THIS MIND YOU FEDERALLY CONTROLLED, NOT SCIENTIFICALLY CONTROLLED, BUT CONTROLLED BY POLITICS AND POLITICIANS AND FROM FUNDS FROM THE POCKETS OF THE TAXPAYERS WHO ARE AS LIABLE TO REVOLT AS DID THE HARASSED PAYERS OF TITHES IN EIGHTEENTH CENTURY FRANCE.

This Goldstein bill also provides, as it goes on its way of making medicine a STATE UTILITY, and the practicing physician a political henchman, that "in event an insufficient number of persons elect to become members of the staff

pursuant to this section within one year after this section as hereby amended takes effect, any additional number of staff members shall be procured by aiding students and prospective students to obtain the necessary training, experience and qualifications at professional schools and colleges *with a financial subsidy of not to exceed one thousand dollars per annum* to each such student who will agree upon graduation from such school or college, to elect to become a member of the staff subject to the terms and provisions of this chapter and the rules and regulations of the department for a period of at least three years."

Nor is this predicament that of medicine alone. It affects commerce and industry. Well has it been cited that "State medicine was first introduced in Russia and Germany. When the doctor in those countries was placed under a politically controlled set-up, such as the Wagner bill would establish, all other professions—clergymen, lawyers, engineers, architects—as well as business itself passed under state control. Behind the Wagner measure is a similar bid for far-reaching power."

Under the Wagner act the total appropriations from June, 1939, until June, 1942, would be \$439,000,000 and upon this the comment is made:

For 1939-June 30, 1940.....	\$ 89,000,000
For 1940-June 30, 1941.....	120,000,000
For 1941-June 30, 1942.....	230,000,000

"On the basis of the administration's billion dollar thinking and expenditures, the actual appropriations do not seem unduly large, but each section carries provisions for unlimited expenditures—once the machinery is established. On the basis of the rate of progression established, the total cost would exceed two billion dollars in 1945 with no limitation on expansion.

Every dollar of State expenditure for medical services would be subject to the approval of some Federal department or bureau—Labor or Treasury Departments or the Social Security Board. And the larger the State outlay the more can be expected from the Federal Treasury.

"Worse still, the federal agencies at their discretion may allocate funds to the States on the basis of population or of 'financial resources of the State.' They could allot to such low income States as Arkansas or Mississippi two dollars for every one dollar expended by the State. They could allot to such populous States as New York

and Illinois only one dollar for every State-expended two dollars."

One of our sanest thinking laymen, Merle Thorpe makes this comment on the situation in "Nation's Business."

"Everywhere liberty is on the defensive. The rights of minorities are suppressed. Freedom of discussion, the right to differ, the right to live one's own life, these things are denied today to millions upon millions of the earth's population.

"What is happening abroad is no local affair. America is not immune. It can happen here. There are no international barriers or immigration walls against the contagion. The pity of it, the irony of it, is that the cause of state-coercion is led by those who label themselves 'liberals.' In the name of this pseudo-liberalism, individual freedom, both economic and political, is called upon to sacrifice itself in favor of more political boards, bureaus, commissions, federal corporations, and authorities, to sell its birth-right of written law for the uncertain hour-by-hour compulsion and discipline of petty rulers.

"At those who oppose the whim and favoritism of administrative law, the neo-liberals stick out their tongues and cry 'Tories, Reactionaries.' Vociferously announcing their liberalism, they forget *that this nation is great because it has encouraged the growth of the individual, because it has abhorred repression and restriction of the private citizen. They forget that it was an absence of the spurious liberalism of today which made possible the American saga, an absence of feudal edicts and legislative fiat in the economic field. They forget that true liberalism founded America, nurtured it, and watched it grow strong.*" (Italics Ours.)

Right here is in order a quotation from the editorial columns of the Journal of the A. M. A. under date of March 11, 1939, that some of our readers may have missed. It runs in part:

"The House of Delegates of the American Medical Association, in considering the National Health Program, approved expansion of public health service where need could be shown, approved medical care to the indigent and to the medically indigent where need could be shown, and approved even expansion of hospital construction, provided the need could be demonstrated, recommending, however, utilization of existing facilities to the utmost before a new building program was authorized. The House of Delegates also approved the principle of assist-

ance to the worker for temporary disability resulting from illness. Now the Wagner act goes far beyond these recommendations: First, it authorizes the expenditure of vast sums before the need has been shown; second, it expands tremendously the work of the Children's Bureau, the United States Public Health Service and the Social Security Board, without any demonstration that such expansion is warranted; third, it proposes to place the state health officers in a commanding position as far as concerns the dispensing of the funds allotted, subject only to approval of all plans by the federal agency to which the task is assigned. Vast funds are provided for the construction of hospitals and health centers and for their maintenance, notwithstanding the fact that there is not yet available any dependable determination of the exact nature and extent of needs that prevail. Who can imagine for a moment that the money once appropriated will not be expended? Finally, the measure introduces the principle of allotment of federal money to the individual states for medical care, by the Social Security Board, without specifying the means to be used in the individual states for providing such service other than to demand the approval of the Social Security Board.

"As is emphasized in the analysis made by the Bureau of Legal Medicine and Legislation, the advisory councils to be set up are vague as to their membership, their duties and their responsibilities. There is one criticism that is to be made above all others in relation to this proposed legislation, namely its extreme vagueness in the light of the vast sums of money to be dispensed and the great powers conferred on certain federal officers in the control of the spending, and particularly the decision as to which of the individual states shall benefit by the expenditures."

It is the duty of every American as a citizen and of every doctor as an humanitarian and a man of science to DEFEAT THE WAGNER BILL.

PRESS COMMENT ON THE A. M. A. INDICTMENT

Hundreds of editorials have appeared in lay journals in defense of the medical profession and the relation of the government's indictment of the American Medical Association. We publish a few comments. They are typical of the

great number that have appeared from time to time.

A PREPOSTEROUS INDICTMENT

(St. Louis *Daily Globe-Democrat*, Dec. 21, 1938)

The indictment by a federal grand jury at Washington of the American Medical Association, three local medical societies and twenty-one individual physicians indicates the lengths to which Assistant Attorney General Thurman Arnold is prepared to go in waging war on what he chooses to term monopolies. As a matter of course, when Congress years ago passed the anti-trust laws it never dreamed that they would or could be applied to such conditions as Mr. Arnold is now attacking. Indeed, there is no reasonable basis either in the spirit or the letter of these laws for such official procedure by the Federal Government. Mr. Arnold is simply making his own laws and by means of criminal indictments on charges that in no proper sense can be regarded as criminal is endeavoring to force organizations which for any reason he does not like to consent to regulations of his own that Congress has never authorized. The "consent decree" which by such coercive procedure he forced upon the automobile companies, applying to their relations with automobile credit associations, is the most recent instance.

Mr. Arnold is presumably in favor of "Socialized Medicine," and because the American Medical Association—which is said to include in its membership 110,000 of the 145,000 physicians practicing their profession in this country—is actively opposed to the forms of socialized medicine recently developing here, he subjects the Association, and many of its members individually, to criminal indictments. The American Medical Association contends that the group health associations against which it has taken its stand tend to lower the high standards of medical practice and to break down the close relations between the physician and his patient. There are certain attractions in the idea of group health insurance which appeal to large numbers of people, but whether it is really in the public interest is a debatable question. Certainly the great majority of physicians do not think so.

And because they do not think so they are, through their vast organization, subjected to criminal indictment by what is erroneously called the "Department of Justice." Regardless of the merits of the controversy no more tyranni-

cal procedure by government could be imagined than this in a country that is still supposed to be free. It is a threat to every organization of citizens, professional or otherwise, that is established for the promotion of common interests. If one can be subjected to such pressure others can be whenever charges against them can be trumped up by an official of the Department of Justice disposed to take such action. The American Bar Association itself could be made answerable to criminal indictments if the Department of Justice as now conducted saw fit to charge it with conduct displeasing to Mr. Arnold. While Congress is investigating this, that and the other it had better look into the conduct of the Department of Justice, else, who knows, it may also be indicted.

MEDICINE AND THE LAW

(*Minneapolis Journal*, Dec. 23, 1938)

The American Medical Association, three local medical societies and twenty-one individual physicians are now under federal indictment charged with violation of the Sherman Act. The indictments charge interference with spread of group medical practice. They mean criminal prosecutions—a government big stick.

Whether socialized medicine or group practice are desirable social objectives are questions still open to debate. Highly complex, they are receiving the profound study of some of the best minds in the profession itself. But assuming for the moment that they are, is criminal prosecution of medical leaders the way to accomplish those ends? To ask the question is to answer it.

This is not to say that wider distribution of the best medical service is not desirable. Doctors themselves do not deny that there are great numbers of people who, through ignorance, improvidence or any one of a dozen causes, are living on decidedly substandard levels, medically speaking. Clubbing and prosecuting the medical profession, however, is not the way to bring these groups to higher standards.

In the last five years the profession itself has shown its willingness to attempt a solution of the knotty problem of medical economics. Beginnings have been made in many communities and some states. These, without exception, have been on medicine's own initiative. They have been brought about largely by the pressure of changing social and economic forces, and the

doctors' knowledge that we live in an age of ferment and new departures. Coercion seems wholly unnecessary.

MISUSE OF A LAW

(*Herald-Dispatch*, Huntington, W. Va., Dec. 21, 1938)

Application of the Sherman anti-trust law to the professions is an idea that only the New Deal could have been expected to conceive. The launching of a criminal prosecution against the American Medical Association is on a brazenness par with the attempt to pack the Supreme Court of the United States.

Laws, especially federal laws, are peculiar. Often they are so worded that their actual purport can be stretched to points entirely beyond the intent of their framers and this may prove true in relation to the charges brought against the A. M. A. and certain individual physicians. But it is patent that the congress which enacted a law for the curbing of industrial and commercial monopolies never dreamed that it might some day be used for the harassing of the professions.

The word "professions" is used advisedly, for if it can be applied to physicians it certainly can with equal force be directed to dentists, lawyers, engineers and any other organized professional group—even ministers and churches.

So far fetched is the Sherman law prosecution of the "medical trust" that it can only be construed as being based on a vengeance motive, vengeance because the A. M. A. has been cool toward the administration's medical care program.

News of this prosecution will stir the nation profoundly. Whatever the result of the proceedings in the courts themselves, they will serve to widen, not heal, the breach between the government and the medical profession as well as to center the attention of the public on the subject of medical, surgical and hospital costs.

THE DOCTORS ARE INDICTED

(*New York Herald Tribune*, Dec. 22, 1938)

With his indictment of the American Medical Association and its eminent officers together with its District of Columbia affiliates and several of the leading physicians of Washington, Mr. Thurman W. Arnold has fired the second gun of his campaign to regulate the vexed question of "group medicine" through the unlikely instru-

ment of the anti-trust laws. The ordinary American entertains, we believe, a high respect for the medical profession as composed in general of men of exceptional unselfishness, competence and devotion. When he thinks of it, he probably admires its powerful official organization—represented by the American Medical Association and its local societies—for the probity with which it has maintained ethical and technical standards and policed the profession against quackery and venality. It will be difficult for Mr. Arnold to convince the public that American physicians are a greedy crew and their organization a selfish monopoly primarily interested in the ruthless suppression of competition.

On the other hand, the ordinary American is coming to regard the leadership of the medical association as inclined to err rather heavily on that conservative side in facing the real problems underlying the economics of medical care in the contemporary world. He is being led to doubt whether that leadership is fully representative of the most alert thought among physicians themselves on this social and economic side of medical care; and if the facts should tend to sustain Mr. Arnold's allegations of a fairly ruthless suppression, in the District of Columbia, of a possibly hopeful experiment in voluntary group medicine, it would be difficult for the American Medical Association to convince the public that its action was either wise or allowable.

The anti-trust laws seem to us a most unsatisfactory instrument wherewith to raise this issue. If, as he hopes, Mr. Arnold gets a consent decree regulating the Washington situation alone, it will leave the Department of Justice with a kind of discretionary power over medicine it is hardly competent to exercise. If the case is fought through the courts, as the medical association promises that it will be, it must end either in a victory for them, which would leave everything as before, or a defeat which might very gravely jeopardize their invaluable function of generally policing the profession. Now, however, that the battle has been joined, it will have to be fought out, and perhaps the air will be somewhat clearer when it is over.

THE MEDICAL "TRUST"

(Atlanta, Ga., *Constitution*, Dec. 25, 1938)

Considering the somewhat unrestrained condemnation of the medical profession which

emanated from the Department of Justice last summer, the indictment of the American Medical Association by a federal grand jury comes as no startling surprise. Thurman Arnold, assistant attorney general, forecast the procedure. He said, with reference to closing Washington Hospitals to certain doctors affiliated with a group hospitalization plan, that "it is an attempt on the part of one group of physicians to prevent qualified doctors from carrying out their calling."

In the legal eye of the assistant attorney general this was a perfect example of a combination in restraint of trade, punishable under the Sherman anti-trust act. He considered it his duty, presumably, to dissolve the "trust" and punish those responsible for its operation. Hence the indictment.

But when the matter is examined in the cold light of common sense, with all the political fog removed, the premise upon which the indictment is based is absurd. The American Medical Association is no more of a trust, or a combination in restraint of trade, than Mr. Arnold's American Bar Association, or the national organization of architects, or indeed, the American Federation of Labor, all of which have prescribed rigid rules of practice.

If a lawyer, or an architect, or a plumber violates the rules of his organization he is chased out at the first meeting, just as a doctor is expelled for practices considered unethical in medicine.

Unfortunately for the idea of a greater expansion of medical services among the people, many shallow-thinking politicians have jumped to the conclusion that a simple appropriation of \$850,000,000 by the federal government will fill the bill. They labor under the delusion that money can buy anything; that a well equipped office—beautiful furniture, overstuffed chairs and shiny new instruments—means a well equipped doctor.

The profession of medicine, by its very nature, is a monopoly. It couldn't very well be otherwise. It requires at least eight years, from the time he graduates from prep school, to fit a man merely to start "practicing." Additional years are required to make him into a "doctor." So the standards of practice naturally ascend to a high plane. It requires never ceasing vigilance to maintain these standards. If they were altered to fit some particular social theory, the profes-

sion would soon be overrun with all manner of smooth-tongued quacks.

It is not denied there is room for broadening and improving the medical care of all the people. The doctors, as a whole, are aware of this. They are willing to cooperate. They are cooperating, on a broad front, and in a practical way. The nature of the extensions sought, however, are such as should call for making haste slowly. It must first be decided just what is to be done.

Therefore the indictment under the assumption that a certain pet scheme in Washington to revolutionize medical practice is everything to be desired will, in all probability, do more to retard than to hasten the movement.

ABOUT DOCTORS

(New York *Daily Mirror*, Dec. 22, 1938)

Most of the idealism, the self-sacrifice, the unselfishness, the burning, passionate interest in the welfare of humans, the unflinching devotion to their duty, and the deepest religious convictions that exist in the young men who begin their lives in America, you will find in those young men who enter medical schools.

As doctors, these young men have gone on to raise the standards of American medicine higher than you will find in any of those European or Latin American countries that boast of their "socialized medicine."

The average American receives medical care that is better than the best that the rich or the politically powerful can get from their specialists in Europe.

The problems of the American medical profession, and its standards, are matters which we as a newspaperman cannot hope fully to understand, would not dare try to dictate. We have not had the training of a Man of Medicine.

By the same token, we do not believe that any brush-lipped college professor—who was chiefly noted at Yale for his campus-variety wit and his delight in the sound of his own voice—we do not believe that such a man as Thurman Arnold is remotely qualified to set up through coercion a code of "fair practice" for those skilled men who devote their lives to healing the sick.

We believe that Thurman Arnold has unwittingly raised an issue that lawyer-politicians would prefer to keep quiet:

How much more of our freedom of action, of

our liberties to engage in the exchange of goods and services, must we sacrifice to the obsessions of legalistic department dictators in Washington who have unlimited power to regulate a productive system which they do not understand?

Such a dictator is this Thurman Arnold, who has used his power to indict as a tyrant's club to force the American Medical Association to alter a position taken by the democratic action of its members.

YALE LAW JOURNAL AND FORDHAM LAW REVIEW COMMENTS ON THE CASE OF THE DEPARTMENT OF JUSTICE VERSUS THE AMERICAN MEDICAL ASSOCIATION

(An editorial review of recent legal notes which throw some interesting light on the background of the proceeding instituted by the Federal Department of Justice against the A. M. A., et al. resulting in an indictment for alleged coercive practices and "restraint of trade." Will a conviction be sought?)

As a natural consequence of the growing interest of legislators in medical-legal questions, there have appeared several important comments recently in legal publications, under such title as "Group Practice Versus the American Medical Association" (1), "Right of a Corporation to Practice Medicine" (2), and "The American Medical Association and the Antitrust Laws" (3).

In the first note above cited, the Yale Law Journal discussed the available remedies of a physician expelled from a medical society for participation in a contract practice plan adjudged by the society to constitute unethical practice. This discussion makes explicit reference, and in fact, centers almost completely about the case of the Group Health Association and the counter action of the District Medical Society in disciplining Washington physicians who contracted with the Association.

A. M. A. CASE PRESAGED IN NOTE

Here one finds set forth in the spring of 1938, the intellectual background (if such it may be termed) of the Government's case against the American Medical Association for alleged restraint of trade, coercive and monopolistic prac-

(1) Yale Law Journal, Vol. 47, pp. 1193-1201, 1938.

(2) Yale Law Journal, Vol. 48, pp. 346-351, 1938.

(3) Fordham Law Review, Vol. 8, pp. 82-102, 1939.

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tices. It may be recalled that the Yale Law School is the alma mater of one Mr. Thurman Arnold. The writer of this note points out that there is an important difference between the equities concerned in an expulsion of a member from a social club and those of a physician expelled from a medical society, observing that when a dispute centers about a medical question "the State is vitally interested in safeguarding the fair trial of an experiment designed to lend the assistance of private resources to the solution of a problem which clearly involves the common weal: national health." Pursuing this thought, the writer finds that "expulsion from labor unions afford neater analogies" than expulsions from social or other organizations in that expulsion of a member of a labor union deprives him in some respects of a "property right."

The Yale note continues: "Taking his cue from such cases the expelled doctor might contend that the By-Laws of the District Medical Society as here applied, are in restraint of trade and therefore contrary to public policy. Although the suggestion that medicine is a trade may be tinged with irreverence (could he have meant *irrelevance?*), its aptness can scarcely be doubted in view of the impact of modern business upon the profession."

Although the writer of this note pointed out last spring that the ultimate fate of experiments designed to reduce the cost of medical care will not be determined by "the success or failure of some expelled doctors in securing from hesitant courts a few scattered reinstatement decrees," and urged that "the most effective alternative is to press present plans for a Congressional investigation of organized medicine";—nevertheless, as events subsequently have shown, the Department of Justice was not overly impressed with the prospects of "smearing" the American Medical Association by means of a Congressional investigation, which might also include within its scope of inquiry the real genesis and the inspiration of the Group Health Association, Inc., itself. Accordingly, Mr. Arnold considered it preferable to seek indictment on a criminal charge, which would permit him to present his obviously flimsy legal case without giving his opponent any opportunity to dispute his contentions in the proceedings leading to the indictment.

PUBLICITY PREJUDICES DEFENDANT

The publicity which accompanied the indictment proceedings, and which was featured by a number of public addresses by members of the staff of the Department of Justice even while the indictment proceedings were under way, was doubtless calculated to "smear" the A. M. A. sufficiently at least to embarrass any further resistance to such contract practice schemes as the government may wish to inspire or finance.

In the second article cited above, which also appeared in the Yale Law Journal in December, 1938, consideration is given to the existing legal encumbrances to the corporate practice of medicine which may stand in the way of the free-for-all, "open shop" practice of medicine by cut-rate groups, group health associations, medical cooperatives, and other organizations government-financed or otherwise.

Reference is made to two recent cases: one that of the Pacific Health Corporation, and the other the Group Health Association, Inc., of the District of Columbia. In the California case, involving a stock corporation organized by laymen to operate for profit, Attorney General instituted proceedings and his claim was sustained that the organization was engaged in the unlawful corporate practice of medicine. For a fixed price the company sold contracts which entitled the holders to medical services by designated physicians who were not employed by the corporation but paid by it according to the services they performed.

An opposite result was reached in the District of Columbia case where the Group Health Association, a non-profit corporation, organized by Federal employes to provide medical service on a monthly payment basis through salaried physicians, sought a declaratory judgment to determine its legal status. The Yale Law Journal note states that in the Group Health Association case "the court distinguished the admittedly illegal practice of medicine by a corporation from mere contracts to furnish the services of physicians to members of the corporation, and reasoned that since one person may contract in advance for the services of a physician over a period of time, an incorporated group of persons may do likewise."

A DISTINCTION WITHOUT A DIFFERENCE?

Thus the conflict between two opposing points of view with regard to the practice of medicine

by a corporation seems to lie in this distinction between "practicing medicine" and "furnishing medical services." The writer of this Yale note points out that while numerous state statutes directly forbid the corporate practice of law, express prohibition of the corporate practice of medicine is rare, and usually, as in New York State, for example, denial of the right of some corporations to practice medicine has been based upon statutes which outlaw the practice of medicine by unlicensed persons, the further assumption being that a corporation is legally a person. "The obvious inability of a corporate entity to meet the educational and character requirements prerequisite to a license is said to inhibit a corporation from practicing medicine,"—an interpretation which has many supporting precedents.

The Yale note contends, however, that the purpose of the State Licensing Statutes is to preserve public health by excluding from practice persons with inadequate ability, morality and training, and that a corporation should legally be able to employ physicians without the corporation itself being licensed, so long as the employed physicians are properly licensed and their professional activities are not interfered with by unlicensed or improperly qualified persons. "Only when lay officers or directors exercise substantial supervision over the professional activities of the physicians employed is there ground for arguing that the corporation is enabling unlicensed persons to practice medicine." And, it is further pointed out that this realistic viewpoint is supported by the fact that private hospitals, sanitariums, educational institutions, and industrial concerns all administer various types of medical services to their members or employes through staffs of physicians hired and paid on a full or part time basis, showing that some kinds of corporate practice are tacitly permitted even in states which do not permit the more obvious types of corporate practice of medicine.

The Yale author feels that any distinguishing basis between the challenged forms of outright corporative practice of medicine and the type already accepted "must be fanciful indeed." He feels that the fears as to the possible destruction of the patient-doctor relationship and the possible commercialization of medicine in corporative practice should not justify barring corporate medical service entirely, but he suggests that "a more sensible solution is for the state to com-

bine its recognized regulatory powers over corporations and professions in order to curb objectionable professional activities," and he feels also that when full professional freedom is granted to its doctors by a non-profit corporation, there appears to be no valid excuse for excluding the corporation from the medical field. He suggests that legislation be enacted "specifically authorizing the corporate form but carefully regulating its activities so as to insure the highest response to professional ethics by the corporation as an entity and by its physicians."

The third article cited above appears in the *Fordham Law Review* for January, 1939, and it is prepared by Joseph Rosenheck, M. D., who is a member of the third year class at the Fordham University School of Law. The writer attempts to answer these three questions:

1. Is the Group Health Association, Inc., illegally practicing medicine?
2. Are the actions of the Medical Society of the District of Columbia a legal and reasonable exercise of the Society's functions?
3. Is medical service such a commodity as to come within the purview of the Sherman and Clayton Acts?

Taking up the first of these questions, the writer makes the interesting point that since the practice of a learned profession involves a confidential relationship, if a corporation were licensed to practice law or medicine there would be a dual allegiance, because the corporation can act only through its agents and employes who would owe a duty to the corporation as well as the patient or client and such duties in many instances might conflict. He points out further that the Justice of the United States District Court who felt that Group Health Association, Inc., was not practicing medicine, justifying his decision on the ground that the corporation itself did not prescribe for the sick, but only through its hired physicians, who he claims are really "independent contractors." However, the writer points out that it is a fundamental rule of law that a corporation is an entity separate and distinct from its members, and that this entity or fictitious person can only act through its agents and employes. Hence, he reasons that if this corporation, through its agents is rendering medical services, it, the corporation, is illegally engaged in the practice of medicine.

WHEN IS A PROFESSION NOT A PROFESSION?

He further points out that the law does not pretend to divide the practice of a profession into departments, on one side the professional services and on the other the business relations, and hence, he contends that even if the physicians in this case were independent contractors, nevertheless, this corporation could not legally manage or conduct the business side of the practice,—since the practice of a profession is treated as a whole.

The question of whether the District Medical Society was engaged in a legal and reasonable exercise of its functions need not concern us in this discussion, except to note that this writer very ably upholds the contention that it *was* legally and reasonably engaged, and so far as we know, no one has disputed this contention. In this connection the writer also points out how radically the conditions of medical service under the Group Health Association plan violated the most essential principles of ethics of the American Medical Association and how inevitable and necessary was the Association's opposition to this plan.

Taking up finally the question of whether medical service is such a commodity as to come within the purview of the antitrust statute, the writer traces the history of the important Supreme Court decisions bearing upon the interpretation of the phrase in the Sherman Act which reads "conspiracy in restraint of trade or commerce among the several states," showing that this phrase has been construed to be irrelevant to cases where laborers were merely attempting to protect their legitimate interests,—even when such attempts were accompanied by incidental evidence.

IS MEDICINE "INTERSTATE COMMERCE"?

As to the definition of "trade or commerce among the several states," the writer notes that the Clayton Act definitely stated that labor is not a commodity or article of commerce and Section 17 of that Act also decreed to labor, agriculture, and horticulture the right to form organizations for mutual help and assistance and provided that such combinations were not to be deemed violations of any antitrust law, nor were they to be considered in restraint of trade.

On the question of whether medical service is labor, the writer finds only one direct precedent bearing absolutely upon this question, in which it was held that the practice of medicine or surg-

ery is labor; and like other forms of labor it decidedly cannot be classified as a commodity of trade or commerce and that therefore such services do not come within the purview of the antitrust laws. There are similar dicta in other cases and there are numerous cases where by analogy, as the author points out, we must arrive at the same conclusion.

As to whether medical practice is interstate in nature, the Fordham author does not feel it necessary to labor this point, although he cites a number of analogous precedents which establish that such service cannot be conceivably interstate in nature. Hence, he concludes: "We have seen therefore that medical service is neither a commodity of trade nor commerce; and that it is not interstate in character. We have also found that restraint of trade when found in interstate commerce must be direct and immediate rather than indirect, remote, or incidental;—so that if we could classify the actions referred to by Arnold as restraint, they would surely be remote and incidental. Finally, we have found that the Clayton Act expressly gives labor the right to organize for the legitimate protection of its interests, and elsewhere in this article we found that physicians as members of a society or association, under proper circumstances, have the right to censure, suspend or expel members for violation of the rules of their organization. . . ."

"If, therefore," he concludes, "the views of our higher courts were to change suddenly and an adverse opinion were to be rendered in accordance with the beliefs of the Department of Justice, then we would be obliged to change all our previous concepts and notions concerning antitrust laws and retrogress to the days of the fixed common law views on the subject. The likelihood of such dramatic change in judicial outlook seems rather remote without further legislative intervention."

MISTAKES IN THE SOCIAL SECURITY LAW

Los Angeles Evening Herald and Express, March 21, 1939, comments on the mistakes in social security law. We quote:

With many groups clamoring for "freezing" or lowering of Social Security pay-roll taxes, the House Ways and Means Committee is now hearing testimony of experts in preparation for a decision on this issue, and expansion of the law.

Future cost of the old-age annuity plan is one of the major problems being studied.

Washington, March 21.—Disclosure that serious errors were made by experts advising Congress when the far-flung Social Security Act was enacted, today raised pending revision of the law to the status of a major congressional issue.

While friends of the system declared that, even if errors were made in charting the future cost of the plan, it still is sound, its critics called for a complete reexamination of the entire system.

The House Ways and Means Committee, following recent testimony of Dr. E. E. Witte of Wisconsin University, chief administration witness when the law was enacted in 1935, planned further investigation into future costs of the old-age annuity plan which affects more than 30,000,000 people.

FORESEE GENERAL LEVY

When the old-age annuity plan was adopted, with both worker and employer paying pay-roll taxes to build up a reserve fund out of which to pay pensions to those over 65, it was estimated that the plan would be self-sustaining for at least thirty years.

Payroll taxes, beginning at 1 per cent each and rising to 3 per cent each in 1949, were levied to finance the system. The basis of the actuaries, according to Doctor Witte, is now shown to be in error.

A general levy of government taxes to help support the system, it is now estimated, may come much earlier than was expected. Eventual cost of old-age pensions is expected to equal a pay-roll tax of 10 to 13 per cent.

ERRORS OF EXPERTS LISTED

Errors of actuarial experts listed by Doctor Witte, executive director of the Committee for Economic Security, which recommended the Social Security Act, included:

1. Whereas actuaries estimated 6,000,000 would draw benefits in 1980, new estimates indicate that 13,000,000 will be eligible for pensions.
2. The national birthrate is declining much more rapidly than was shown in figures on which experts based estimates. This means greater proportion of old people in the future.
3. People will live longer than the figures of from 10 to 15 years ago indicated for the future.
4. Old-age annuity pay-roll taxes were based

upon an average wage of \$1,100 a year. In 1937 the average was only \$867.

5. Error was made in calculating the number of persons in exempted occupations who would work part of time in covered occupations, and thus become eligible for benefits.

All of these factors, it was explained, mean that the future cost of old-age annuities will be far greater than was anticipated.

MAY HAVE TO LEVY TAXES

The result is that, unless pay-roll taxes are increased, the government may be confronted in the future with the necessity of levying taxes to support the aged, which will either cause collapse of the system or interfere with the credit of the government.

The situation was cited by various congressional groups to push their own plans of revising the Social Security Act.

Administration leaders declared that testimony of Doctor Witte, who vigorously defended the Social Security Act, shows the necessity of keeping the present-pay-roll taxes and letting the future increases go into effect. They insist that it wipes out the Republicans' claim that the huge reserve fund being built up in the early years of the law is unnecessary.

Rep. Jenkins, Republican of Ohio, a member of the Ways and Means Committee, declared that the disclosure shows "the fallacy of the present plan and that Congress must adopt a pay-as-you-go policy."

CALIFORNIA DOCTORS RAP HEALTH BILLS

Los Angeles Times, March 24, 1939, says the proposal by the State of certain legislation is called socialistic. We quote further:

Vigorous opposition to compulsory health insurance bills pending in the California Legislature which they hold will introduce a socialistic and European health system was voiced last night by speakers before an emergency meeting of the Los Angeles County Medical Association.

The meeting, called by the Association Council, headed by Dr. Ralph B. Eusden, was held in Polytechnic High School auditorium and brought out a record attendance of two thousand medical leaders.

RIISING VOTE

In a rising vote, called for by Dr. Lowell Goin, Speaker of the House of Delegates of the Cali-

fornia Medical Association, an estimated two thousand physicians and surgeons registered their disapproval of the two pending measures.

The bills under fire are Senate Bill No. 1127 and Assembly Bill No. 2172. Dr. Samuel Ayers, Jr., who attacked the asserted bureaucratic powers which would be placed in the hands of laymen under the compulsory plan, said:

"Compulsory medicine, as provided in these bills, would result in perfunctory, unscientific, slap-dash services rendered by harried and underpaid doctors in crowded offices.

UNHAPPY PICTURE

"Increased taxes and the political spoils system would complete the unhappy picture.

"State control of medicine would be only the forerunner of state control of dentistry, then law, then the press, and, finally, labor. Then the picture of totalitarianism is complete.

"These bills are in no sense progressive legislation and have no place in the program of a progressive administration. It is unadulterated racketeering at the expense of an honest profession."

STEPS ALREADY TAKEN

Allen W. Widenham, general manager of the California Physicians' Service, said that organized medicine already has taken steps to provide adequate medical care in California."

He referred to the medical service sponsored last December by the California Medical Association, which is a voluntary health prepayment plan.

Dr. William H. Daniel, president of the Los Angeles County Medical Association, declaring the proposed legislation "vicious," said it "would force on California an inferior grade of medicine, as has been the experience in Europe.

"We as an organized body of medical men, demand that we be allowed to continue the practice of medicine as it has been done, without any third party coming in between doctors and patients."

WISCONSIN STATE MEDICAL SOCIETY TO HONOR DOCTOR BEAUMONT

On August 30, 1939, the Wisconsin Medical Society furnishes a huge tablet in honor of Doctor Beaumont at Prairie du Chien, Wisconsin. Speakers of national reputation will appear on

the occasion, doctors of prominence from all over the United States will attend the meeting.

A life summary of Dr. Beaumont is interesting and is reproduced for convenience of the medical profession as well as the laity.

LIFE SUMMARY OF DOCTOR BORN 1785, DIED 1853

1785, Nov. 21—Born at Lebanon, Conn., son of a Revolutionary soldier. Attended village school. As the result of an accident when a small boy, developed defective hearing which became more and more pronounced and was lifelong.

1806—Left home, aged 21, traversed western Massachusetts and Vermont, arriving in spring of 1807 at Champlain, N. Y., where he taught school three years.

1810—Went to St. Albans, Vt., to study medicine under Dr. Benj. Chandler.

1812, June—Received license from Vermont Medical Society to practice medicine. Went to Plattsburg, N. Y. Enlisted as Surgeon's Mate in the U. S. A. and served during War of 1812-14.

1815—Entered private practice with Dr. G. Senter in Plattsburg.

1816—Re-entered army.

1820—Ordered to Mackinac under Gen. Maccomb.

1821—Returned to Plattsburg and on August 21 married Mrs. Deborah Green Platt. A few days later they departed for Mackinac.

1822, June 6—Alexis St. Martin wounded and placed under Dr. Beaumont's care.

1823, April—Dr. and Mrs. Beaumont took Alexis into their home.

1824—Dr. Beaumont sent complete report of St. Martin's case to Surgeon General Lovell, U. S. A.

1825—Medical Society of Michigan Territory made Beaumont an honorary member in recognition of his report.

May—First series of experiments.

June—Ordered to Ft. Niagara. Visited Plattsburg. St. Martin ran away to his Canadian home.

1826—Ordered to Green Bay.

1827—Served as Surgeon under Maj. Whistler in Winnebago uprising.

1828—Ordered to Prairie du Chien, arriving August 5.

1829—St. Martin found by American Fur

Company officials and brought to Prairie du Chien. Beaumont resumed experiments, recording 56 between December 6, 1829, and April 9, 1831.

1831—St. Martin, with Beaumont's permission returned to Canada.

1832—Dr. Beaumont served in Black Hawk War. Being granted six months' leave of absence left Prairie du Chien August 23 for Jefferson Barracks, St. Louis, in charge of wounded militia, and proceeded to Plattsburg. Alexis returned and they went to Washington where 116 experiments were recorded between December 1, 1832, and March 1, 1833.

1833—Returned to Plattsburg. Columbian College, Washington, D. C., and Connecticut Medical Society each conferred honorary degree of Doctor of Medicine.

December—Dr. Beaumont's book, "Experiments and Observations on the Gastric Juice and the Physiology of Digestion," was published in Plattsburg.

1834—Leave of absence ended. Ordered to St. Louis, arriving July 9.

1838—Sir Andrew Combe, eminent English physiologist, published in England an edition of Dr. Beaumont's book.

1839—Resigned from army and entered private practice in St. Louis.

1840—Was offered chair of surgery at the first medical college established west of the Mississippi, at St. Louis University. Elected President of St. Louis Medical Society.

1853—Died at his home in St. Louis on April 25 and was buried in Bellefontaine Cemetery.

1916—Papers, letters and books of Dr. Beaumont were given to the library of the Medical School of Washington University, St. Louis, Mo., by Miss Irwin, a granddaughter. They are now housed under lock and key in what is known as the "Beaumont Room."

1931, Aug. 19—Miss Sophie Beaumont, daughter of Israel Beaumont, the doctor's son, writes from Ephraim, Wisconsin: "My cousin Miss Lily Beaumont Irwin died in 1916 at St. Louis, leaving my brother Ethan Allen Beaumont, my sister Julia B. Cummings, of Orange, California, and my sister May Beaumont and myself only surviving grandchildren of Dr. Beaumont."

1931, Sunday, August 30—Dr. Beaumont

memorial dedication at Prairie du Chien, Wisconsin.

A DOCTOR WRITES OF EARLY HISTORY OF THE NORTHWEST COUNTRY

Dr. P. L. Scanlan, graduate of Rush Medical College, 1891, and resident of Prairie du Chien, Wisconsin, has written a history of Prairie du Chien, Wisconsin, from the day when it was the first settlement in the northwest to the present time.

The book is entitled PRAIRIE du CHIEN: FRENCH, BRITISH AND AMERICAN. The work covers a period from about 1630, it describes the activities of the early explorers, fur traders, missionaries. The work is not local in character, it is descriptive of the activities of the early settlers, their explorations up and down the Mississippi to New Orleans, up and down the Wisconsin river to Green Bay; to the Mackinac Island; to Albany, indeed the work is almost a history of the northwest territory.

Dr. Scanlan presents facts, figures, names and photostatic copies of federal and other records which portray the results of his intensive research work. It is indeed an interesting volume, replete with facts and references.

The volume is the result of fifteen years of arduous, painstaking work on the part of Dr. Scanlan. Besides study of original records of the State Historical Society and records in Prairie du Chien, such as the Register of St. Gabriel's church written in early years in French, the author visited St. Louis, Quebec and Montreal to obtain first hand information.

Several years ago the author spent months in Washington, D. C., doing research in the Congressional Library and the War Department records.

The volume particularly features this original source of material in its chapters on military occupation and fur trading days in Prairie du Chien.

The work also covers some of the history of Green Bay as well as some of the general history of Wisconsin. The work represents an array of facts never assembled before. There are 13 chapters, approximately 300 pages, with appendices, notes, index and a few maps made especially for the author.

The author devotes considerable space to a

description of the activities and life of Doctor Beaumont while stationed at Fort Crawford at Prairie du Chien.

The work appears in clear type and good paper and attractive red binding.

The work is published by THE BANTA PUBLISHING COMPANY, MANASHA, WISCONSIN. Price \$2.50.

PRaises PROFESSIONAL SERVICES FREELY GIVEN BY DOCTORS

Westbrook Pegler, *Chicago Daily News*, August 10, 1938, says:

The problem of medical and surgical treatment for the masses is cluttered with undeserved pity for people who have convinced themselves that they can't pay the doctor for easing their pains or saving their lives, but could do so if they tried.

The doctors of this country give away more free goods off their shelves than the members of any other profession, including the actors and musicians, who come next. They have their gyps and rotters, their publicity-crazy hams and ignoramuses, but they do more good for suffering humanity and in critical moments than the members of any other calling.

Of course, it will be argued that they should do this because they are in a position to. That is their job. But the fact is, nevertheless, that they do give this service, and it is a further fact that society doesn't appreciate the good they do. People overemphasize their mistakes of judgment or negligence, forgetting that a doctor's mistake is more likely to have fatal or, anyway, dreadful consequences than a mistake by a plumber, a grocer or a journalist.

DOCTOR'S MISTAKES OVEREMPHASIZED

If the work of the plumber springs a leak, if the grocer sends snookies instead of snackies, or if the reporter names W. C. Smith as correspondent in the divorce story when it should have been W. G. Smith, that means very little paint off anyone's fenders. But let a doctor make a comparable mistake and there is all heck to pay, on top of the fact that maybe he stood to be swindled out of his pay—or most of it, anyway—even if he had done a bangup job.

There are many phases of the question, but I mean to stick to this one for today's lesson. I am thinking of those who think that \$200 is

an outrageous price to pay for the removal of an appendix which has developed the menacing nature of a bomb in the patient's inwards. The surgeon gets the victim into a hospital as quickly as possible, gives him a jab of something to relax him and in a very short time is delving around in his giblets without 50 cents on the line to pay for laundering his smock.

RESENTS DOCTOR'S BILL

So the patient gets well, and when the bad news comes he forgets that feeling as of a litter of porcupines, frisking about in his abdomen, forgets how scared he was and his alarm for the security of his dependent family, and calls the doctor a burglar. Why, he makes only \$25 a week, and so instead of paying the doctor a dollar a week, as he would pay the instalment man for the radio or sewing machine, his policy is to skip it entirely. He forgets also that if the surgeon hadn't done his stuff promptly and well, specialized stuff that nobody but a surgeon could have done, his family would be on the town right now.

If a patient can pay small amounts to a co-operative over a spell of years for treatment which he may need in the future, he can just as well pay a doctor a stated amount each week over a long term for treatment which he has already received. But in too many cases he just won't, and the doctor is accused of bearing down on a man who can't afford to pay for the saving of his life, but can manage somehow to come up with the price of many nonessentials.

Many doctors nowadays serve patients in the public clinics who are able to pay reasonable professional rates for their treatment. In this way the doctor is compelled to rob his own family of the just rewards of his work so that other men's families may deadhead it.

PATIENTS MISREPRESENT INCOMES

Patients lie about their income and pretend to be in tatters who ought to be told to decide which they value more, their money or their lives. And the ethics of the profession and sentimental sympathy for the invalid are such that if the patient were asked to stand for a frisk to prove his inability to pay, that would be a callous outrage and the doctor would be an extortionist.

But there is no great wrong in that, considering how minutely the people's affairs are searched by the income-tax men. We hear that

it is degrading to the applicant to send investigators nosing into their family earnings, if any, when the problem is one of relief or medical treatment, but that is something that all those who have taxable incomes must submit to at any time the government feels inquisitive.

There is more or less larceny in all the human race, and this problem of medicine for the masses would be less difficult if those who can pay were prevented from appealing to public sympathy at the doctor's expense by mingling with the truly destitute.

IS THE REFUGEE PHYSICIAN A PROBLEM?
APPROXIMATELY 2,000 HAVE BEEN ADMITTED TO THE UNITED STATES SINCE 1933

Not so many years ago, it was considered a mark of great distinction for an American doctor to study in Europe, especially in Berlin or Vienna. When he returned to the United States, his reputation was augmented and his practice increased. Since the World War, and more particularly since the triumph of its aftermath, totalitarianism, in Nazi Germany in 1933, the situation has been reversed.

Totalitarian suppression of free, democratic, scientific thinking coupled with persecution of men and women who differ from the dominant totalitarians in race, creed or political opinion, has thrust world leadership in medicine upon the United States. It has also created the problem of caring for displaced foreign scholars and scientists, including physicians, who have been fortunate enough to escape to the United States.

Offering haven for oppressed peoples is a peculiarly American problem. Since 1620, when the Pilgrim Fathers disembarked from the Mayflower at Plymouth Rock, the continent of America, "the New World" has enjoyed and upheld the tradition of sheltering and sustaining political or economic refugees from the "Old World."

That American physicians have not been unmindful of the American tradition is illustrated by the very existence of voluntary groups devoting time and money to the solution of the problem of the refugee physician. Two of these organizations are the Boston Committee on Medical Emigrés, 114 Riverway, Boston, Mass. (chairman, Dr. David L. Edsall), and the Emergency Committee in Aid of Displaced Foreign Medical Scientists, 59 East 75th Street, New York City (chairman, Dr. Emanuel Libman), with a nationwide membership.

The task of these committees is delicate but now overwhelming, for the number of foreign physicians who have come to the United States since 1933 is surprisingly small. At the present time, they represent an increment of *little more than 1%* to the total number of licensed physicians in the United States. Statistics obtained from the Immigration and Naturalization Office of the U. S. Department of Labor in Washington show that only 2,069 immigrant alien physicians have

been admitted to the United States since 1933 (see table).

Immigrant Aliens from Austria, Germany and Italy (Last Permanent Residence) Admitted to the United States as Immigrant Aliens for Permanent Residence, Whose Profession or Calling Was Physician
Years Ended June 30, 1928 to
Feb. 15, 1939

During	Immigrant Physicians		From
	Austria	Germany	Italy
1928	3	22	11
1929	5	22	11
1930	8	13	11
1931	8	8	16
1932	14	9	15
1933	4	4	8
1934	6	160	12
1935	13	91	6
1936	11	242	9
1937	15	271	14
1938*	62	302	26
Totals	149	1,144	139

*Figures for this year subject to possible slight change when final statistics for that year become complete.

This table is compiled from data obtained from the Immigration and Naturalization office of the U. S. Department of Labor in Washington, D. C. It has appeared in the Journal of the American Medical Association.

A total of 776 immigrant alien physicians were admitted to the United States for permanent residence during 6 months, July through December, *Modern Medicine*, March 1939.

TUBERCULOSIS

Tuberculosis is still the first cause of death during the age period from fifteen to forty-five, although it has been reduced to seventh in importance as a cause of death in the entire population.

There are estimated to be more than 500,000 active cases of tuberculosis in the United States.

It is responsible for the death of 200 people every day, of one individual every seven and one-third minutes. Thirty years ago deaths occurred at the rate of one every three and one-half minutes.

Two-thirds of all the deaths from tuberculosis occur before the age of forty-five.

Considerably more than half of all the deaths from tuberculosis occur during the important productive years of life—between the ages of fifteen and forty-five.

Each year, tuberculosis claims the lives of forty thousand young people between the ages of fifteen and forty-five.—Exchange.

In the last National Health Survey (1935-1936) covering a two-year period, it was reported that falls are the most frequent cause of accidental injury, exceeding by 200 percent automobile and all other types of transportation accidents.

MEDICAL ECONOMICS

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Writing an article before the annual meeting of the Illinois State Medical Meeting, and having the same published immediately afterward is a most difficult task. Every member of the Society attending the annual meeting will have the opportunity of learning all the current problems of the profession as well as the prevalent opinion of those who should be best able to prognosticate the future.

It is to be hoped that all you who read this article and attended the annual meeting will have attended as many of the meetings of the House of Delegates as possible and also the meeting of the Secretaries on Tuesday night. It is at these places that the current problems are presented and opportunity is offered for criticism of the activities of the society both past and future.

Probably the outstanding development of the past few months has been the many cities in which the medical profession through their regular society organization has offered some plan of medical care to the public, grounded on insurance principles. Most important to the physicians of Illinois is that now in the process of organization in the city of Chicago. An opportunity will be given for those in the low income groups to obtain complete medical care by the monthly payment of a fee. At the onset this will be deducted from the paycheck of the individual in a manner similar to that of Group Hospitalization. Those members of the plan will have the privilege of calling any physician, who has previously agreed to work under the plan, and at the completion of the illness the said physician will render his bill to the headquarters of the organization. Naturally there will be restrictions as to amount of service rendered under certain circumstances and the amount of the charges will be subject to investigation when they exceed the average in that community. Similar plans are now in various stages of formation in New York, Milwaukee, Detroit, California, Utah, to mention only a few of the places that have

come to the attention of the writer. It is too early to make any comment as to the success of these attempts to solve the problem of adequate medical care to the low income group, concerning which we have heard so much the past few years. However, the outstanding fact remains that the medical profession itself is trying to discover a better method of caring for these people, by the only scientific method, that of actually trying out the plan. This is greatly at variance with the method of the reformers who have been able to work it all out on paper, without the necessity of any actual tryout.

On the Ford Sunday Evening Hour of April 16, 1939, Mr. W. J. Cameron gave a most interesting talk on *Servant of Health*. Every physician should read this talk which is available at the Ford Motor Company, Detroit, Michigan, by writing to them and requesting Number 32 of the 1938-1939 Series. Coming from a member of the laity it cannot be subjected to the criticism of biased propaganda. A supply of these brochures on your waiting room table would help greatly.

The April issue of *Victor News* contained a most excellent editorial on Socialized Medicine. All that can should read it. I will quote on statement from it for your thoughtful consideration: "To what lengths socialized medicine may be carried in this and many other countries will depend finally on public, rather than the professional opinion, and unfortunately public opinion can be molded as much by ignorance as by knowledge. It is, therefore, of vital importance that the public be given a massive dose of knowledge concerning the advantages of the preferred system of medicine." This is what the writer has been trying to say for the past year. To give this massive dose is not the work of any small group of zealots, but the job of the medical profession throughout the entire United States. If the medical profession cannot furnish and deliver the dose at every opportunity then we must ex-

pect the public to receive it from some other source, and you may rest assured that the source will not be friendly to the present method of furnishing medical care.

On page 39 of the April issue of *Medical Economics* the mask is torn off the Senate Bill 1620, the so-called Wagner Bill affecting medical care under the Social Security Administration. Read this one page article and see how the plan is to be promoted and gradually be made compulsory. Also read the articles on page 19 and 56, where the proposed plans are discussed.

In the April issue of *Modern Medicine* there is a complete resume of the attempts of organized medicine to defeat the attempt to foist compulsory State medicine on the public. The concluding paragraph of this article, which is well worth your reading states. "Perhaps the profoundest dopest in the socialized medicine race is the Washington Newspaper man, who said, 'By 1940, the politicians will be so busy with other problems that they will have forgotten all about socialized medicine.'" All we can say is amen. Paul, Mallon, writing a syndicated article for the Hearst Newspapers a few days ago stated that the Wagner Bill was buried for this session of Congress. Those of you who read Mallon know that he rarely makes a mistake on what is actually going on in Washington.

It is a well known fact that the medical profession is not in complete accord with opposition to the Wagner Bill. In the April 22nd issue of the Journal of the American Medical Association is an article written by Dr. J. N. Baker of Montgomery, state Health Officer from Alabama and a Member of the House of Delegates of the AMA. You should read this article as it presents a view not held by the majority of the medical profession. Also read the comments of the Bureau of Medical Economics and the Bureau of Legal Medicine and Legislation, particularly the latter. Two facts appear most important in the study of this article. First it is written by a present employee of the government, scarcely an unbiased observer and second, admitting the accuracy of the shortcomings of his own state, he recommends a most radical treatment for the entire nation without knowing how much need there is for it elsewhere.

And so the kettle continues to boil, with much steam, some excitement and even fire, but without as yet cooking up anything. What eventu-

ally results is up to all of us. We must keep the kettle boiling even when we have to furnish the fuel for them we can direct the steam.

E. S. HAMILTON,
Chairman of Commission.

Correspondence

WOMAN'S AUXILIARY

March 15, 1939

Jackson Park Branch of the Woman's Auxiliary of the Chicago Medical Society had a round table study program on legislation pertaining to socialized medicine. Mrs. Carl Helgeson prepared the most comprehensive paper on this subject ever written by an Auxiliary member, so we take great pride in passing it on for study by other Auxiliaries.

Following this excellent paper Mrs. F. P. Hammond, chairman of the day's program, had all the members take part in a round table discussion of some one hundred pertinent questions and answers on various phases of health insurance.

All members acclaimed this study program the most interesting and informative they had ever had, and the outstanding feature was, the members of the auxiliary themselves put on the entire program.

LEGISLATION IN RELATION TO MEDICINE AND SOCIALIZED MEDICINE

There are so many explanations to this topic that it will be impossible to give a complete story of the New Deal's need for socialized medicine, but it is obvious that the medical group is their present target to retain themselves. All of this information can be easily obtained by reading the Editorial Section of your *Illinois Medical Journal* and your time will be so well invested that you will wonder how you missed it before. In fact, you will feel ready to start a movement of "Americanism" and demand certain prerequisites and specific moral obligations of any individual connected with Public Office.

Dr. J. R. Neal, the Illinois Legislative Chairman, states that the current wave of interest in making medical care cheaper or the idea of "free medical care" in cases of economic dependence has especial appeal in this period of political, economic and social unrest. Many of the fantastic schemes tried have already proved themselves basically false and little more than gestures to create the impression that something is being done. It is accepted by the medical group that the gap between medical knowledge and practice is too great for the interests of society and no one disputes the potentialities of improving health in many respects, but that free medical care or socialized medicine would bring about these ends is subject to debate.

Health conditions in the United States are superior in every respect to those of the world powers of Europe or Asia where such schemes have been in operation—death rate, span of life, infant mortality, communi-

cable diseases and prevention figures all should be convincing enough.

In January the American Medical Association and the Medical Society of the District of Columbia were indicted in Federal Court as violating the Sherman Anti-Trust law. For the complications that Mr. Thurman Arnold of the Department of Justice is up against may I refer you to your August *Illinois Medical Journal*. The sequence of events leading up to this are, of course, a series of political maneuvers. Outstanding is the meeting called in Washington last July called the National Health Conference attended by hand-picked, preconceived groups of invited guests representing labor, welfare agencies, medical organizations, social workers and others. From that developed the National Health Program which was the result of the work of a technical committee appointed by the Inter-Departmental Committee to Coordinate Health and Welfare Activities by authority of the President of the United States. Five specific proposals were made:

1. Expansion of Public Health Service.
2. Increase of all hospital facilities.
3. Medical care for medically indigent.
4. A general program for medical care and (note this crowded in)
5. A program of compulsory sickness insurance covering the entire population of United States.

At this meeting practically no time was allowed for discussion. It was stipulated no formal action would be taken by the Conference. Nevertheless, responsible members of the government indicated that these proposals would be embodied in legislation to be submitted to Congress.

Dr. Emerson, former New York Health Commissioner, points out that this was not at all a National Health Program idea in any rational sense because it was neither based on respective needs of parts of the nation nor has it been nationally accepted. As Dr. Chas. M. Heyd, Past President of the A. M. A., warns us, any type of government enterprise politically controlled is:

1. Dominated by rules and regulations of a medical bureaucracy.
2. Is void of competition because of being a government monopoly (privileged monopoly).
3. Is subject to government dictation.

It might be well to remind ourselves that Germany which led the world 50 years ago in things medical was the first to sponsor the socialized medicine parasite. Germany has made no fundamental discoveries in 50 years. Contrast this with the United States—insulin for diabetes, liver therapy for anemia, vitamins for the deficiency diseases, the conquest of many contagious diseases (diphtheria, typhoid, malaria, yellow fever) and preventive medicine.

Politicians' need for votes have far more to do with sickness insurance than the needs for medical care of the poor. This is a scheme to create the idea in the minds of the laity—particularly the working man, that the State exists for his benefit. When the working man's economic conditions are adequate he will need no medical dole disguised under the term "Compulsory health insurance." Compulsory health insurance can

buy no more medical service than what is left of the amount paid for in premiums (or taxes) after the costs of administration are deducted. Any of the European plans for socialized medicine do not provide for new discoveries or additional services because there is not enough money left. Under compulsory health insurance it would be beyond the resources of most families to educate their sons for the practice of medicine for the next step would be government supervision and financial control of the medical schools and selection of its applicants by influence, favor or nomination by politicians perhaps eliminating our most capable students. This same regimentation would likewise control the hospitals.

Dr. Neal reports in the January Medical Journal: "The Interdepartmental Committee" appointed by the President estimated the annual cost of nationwide compulsory insurance as being at least $2\frac{1}{2}$ billion dollars or \$20.00 per head of population. It would be too much to expect that political spoilsman would not be attracted to an enterprise of such financial magnitude. Even the Veterans Hospital System is an example where medical service is not limited to financially needy but was even used by the President's Cabinet member who was neither Secretary of the Army or Navy. Imagine the possibility of abuse by petty officials. The President's Committee's estimate of $2\frac{1}{2}$ billion dollars is apparently conservative for on the basis of the estimate of Bower Aly, a proponent for socialized medicine, it would be 10c per day per person which figures out to be 5.8 plus per cent. of the total national income and who pays for this? The President transmitted to Congress that the recommendations of the National Health Conference for setting up a system of medical care and of broadening Public Health and Hospital programs be studied. (The President has also mentioned that health conditions are better in the United States than anywhere in the world, but even at that it is too good an emotional appeal to let slip out of the hands of politics). Senator Wagner had announced he would introduce such a bill. There is considerable doubt that such a bill will pass this session on two scores, namely, 1. heavy cost in comparison with prevailing interest in economy and 2. prevailing health conditions in this country are so favorable.

How serious will this become? Some of the states have already actually forced through a type of socialized medicine for farm families in states in the South, both the Dakotas, Arkansas and California. This has been organized through the Farm Security Administration. Let us review this Farm Security Administration construction. First this was started as an emergency measure called the Emergency Relief Administration, then called the Resettlement Administration and then these incorporated and became permanent organizations paid for out of taxes called Farm Security Administration. Their medical schemes are financed under two methods—state corporations and county pools with money advanced by the Farm Security Administration. It is called the Farmers Mutual Aid Corporation of North Dakota and the South Dakota Farmers Aid Corporation (clever name devises!) A third type of program is being tried by 2800 families in 23 counties in Missouri, Indiana, Ohio and Iowa under a little dif-

ferent method where the doctor estimates the medical needs and the Farm Security Administration on the family's ability to pay. The Farm Security Administration advances the money to a specific trustee and it is not pooled. Details of these are to be found in the article "Rehearsal for State Medicine," *Saturday Evening Post*, Dec. 18, 1938, and a recent *Illinois Medical Journal*.

The January issue of the *Times* gives the views of Henry Sigerist of Johns Hopkins and while even he is an ardent enthusiast for socialized medicine, let me quote: "It will be serious if Government control brings politics into medicine." Even at that he believes political corruption and inefficiency do not need to occur in government activities.

Refer to your late issue (March 11th) of the *J. A. M. A.* (page 996) and you will note that on February 28 Senator Wagner introduced a bill into the Senate. Much secrecy surrounded its preparation and development to fulfill the recommendations of the National Health Program and the original proposals are modified in wording. The bill proposes a three year program providing more than \$98,250,000 for the first year and subsequent grants in ensuing years, indeterminate in amounts except in a few particulars but sufficient to make effective the purposes of the bill. The House of Delegates of the A. M. A. approved the expansion of public health services where *need* could be shown, approved medical care to the indigent where *need* could be shown, and approved hospital construction, provided the need could be demonstrated recommending, however, utilization of existing facilities before a new building program was authorized. They also approved the principle of assistance to the worker for temporary disability resulting from illness, but the Wagner act goes beyond these recommendations:

1. It authorizes the expenditures of vast sums *before* the need has been shown.
2. It expands tremendously the work of the Children's Bureau, U. S. Public Health Service and the Social Security Board, without any demonstration that such expansion is warranted.
3. It proposes to place the state health officers in a commanding position as far as concerns the dispensing of funds allotted, subject only to approval of all plans by the federal agency to which the task is assigned.
4. Vast sums are provided for the construction of hospitals and health centers and for their maintenance, notwithstanding the fact that there is not yet any dependable determination of the exact nature and extent of needs that prevail. (Who can imagine that the money once appropriated will not be expended?)
5. It introduced the principle of allotment of federal money to the individual states for medical care by the Social Security Board without specifying the means to be used in the individual states for providing such service other than to demand the approval of the Social Security Board.

There is one criticism that is to be made above all others in relation to this proposed legislation, namely, its extreme vagueness in the light of the vast sums of money to be dispensed and the great powers conferred on certain federal officers in the control of the spend-

ing, and particularly the decision as to which the individual states shall benefit by the expenditures.

While we understand these facts, the voting public does not nor do they, generally speaking, have access to this information. The laity should understand these facts so that legislation cannot be put through having the earmarks of discrimination at the will of the party in power. Eventually such measures mean that the income of the middle class particularly is spent with no choice before he even gets it. The cost of living plus taxation will become so high that we will have to live in government pension homes. Remember too that the A. M. A. indictment still has to go through the courts.

What are we supposed to do now that the New Deal is forcing physicians into politics?

Referring to the February issue of the *Illinois Medical Journal* again, Dr. E. S. Hamilton says: "If our legislators will assert their rights in assuming responsibilities as it has done in the recent P. W. A. appropriation bill and will assume its responsibilities to a degree that has been lacking for the past 6 years, independence of action can be increased to the point where all legislation will be considered fully and decided on its merits and then there is hope. However, a return to the "MUST SYSTEM" of recent years spells disaster for the public as well as medical profession. While propaganda for such legislation is going full speed the medical profession is not fooled but the casual reader must be impressed by both number and readability of the articles and cannot be expected to extract the real truth. We should all use our influence on our representatives in Congress and stop any action during the present Congress.

The job of the conscientious legislative man is no easy one at best for he is under pressure to support his party even though his reasoning, if he had time to investigate the facts in certain issues, may be contrary. It has been demonstrated, as in the Court Packing incident, that it is only human, however, for our legislative men to vote in accordance with public sentiment regardless of his party.

The pamphlet by J. Weston Walch of the Society of the State of N. Y. entitled "On the Witness Stand," gives complete answers to the numerous questions asked of the medical profession by the laity. This will be useful to us.

Our Auxiliary should in some way take an active part rather than keeping this information to ourselves.

INTERNATIONAL COLLEGE OF SURGEONS TO MEET IN NEW YORK

The Fourth Annual Assembly of the International College of Surgeons will be held at the Hotel Roosevelt, New York City, May 21 through May 25.

More than 1200 representatives of thirty nations are expected. Internationally famous surgeons will lecture to the assembly on their own latest developments in surgical techniques. Exhibits demonstrating the most modern advances in surgical science will feature the assembly. New instruments and apparatus will be shown by leading manufacturers. Operative clinics will be held at principal metropolitan hospitals. Election of officers,

admission of new members, and awarding of honors will be performed with colorful pageantry. International Surgeons' Day at the New York World's Fair climaxes the convention.

Dr. Norman R. Goldsmith, Director of Public Relations, 32 East 37th Street, New York, N. Y.

ALLERGISTS OPPOSE ORAL POLLEN TREATMENT

The following resolution has been adopted by the Chicago Society of Allergy: The members of the Chicago Society of Allergy, partly from their own experience and partly from a survey of both the published and some of the unpublished experimental and clinical results of oral pollen therapy, believe that the evidence of beneficial effect is at present not sufficient to warrant the commercial promotion of material for oral pollen therapy. Because of their controversial and contradictory nature, the published results of oral pollen therapy are inadequate to justify the commercial promotion of such a product. In addition, our investigation indicates that many men who have used oral pollen therapy have failed to publish their work because of the unsatisfactory results obtained. We therefore urge that the commercial promotion of oral pollen therapy should be deferred in the interest of the public and of the general practitioner until further experimentation now in progress has been reported.

ILLINOIS PHARMACEUTICAL ASSOCIATION OPPOSES SOCIALIZED MEDICINE

At the recent Executive Board Meeting of the Illinois Pharmaceutical Association the following resolution was presented and passed and a recommendation made that a copy of this resolution be sent to your organization:

WHEREAS there is a movement on foot to popularize and foster State or Socialized Medicine in the United States, and

WHEREAS the Illinois Pharmaceutical Association is firmly of the opinion and belief that such movement is detrimental to the welfare of the medical, pharmaceutical and other allied professions and inimical to the public interest,

Now, THEREFORE, *It Is Hereby Resolved*, that the Illinois Pharmaceutical Association places itself on record as being opposed (a) to State or Socialized Medicine, (b) to the movement of fostering same in the United States, (c) to the provision of funds for the National Government for the furnishing of medical treatment, and (d) to the movement recently started in the State of New York urging Congress to do so.

And, It Is Hereby Further Resolved, that the Illinois Pharmaceutical Association pledges its full support to and cooperation with the American Medical Association and the Illinois Medical Society in their sincere and unselfish stand against state or Socialized Medicine in the United States and in their combating any movement therefor; and that a copy of the foregoing resolutions be sent to each of said organizations.

ANNUAL MEETING OF THE IOWA AND ILLINOIS CENTRAL DISTRICT MEDICAL ASSOCIATION

The annual meeting of the Iowa and Illinois Central District Medical Association will be held May 11, at the Outing Club, Davenport, Iowa.

On the program will appear the following:

Dr. Edw. B. Tuohy, of Rochester, Minnesota, associate in anesthesia; Dr. John A. Borghoff, associate professor of Dermatology, Creighton University School of Medicine, Omaha, Nebraska; James B. Eyerly, assistant clinical professor of Medicine, Rush Medical College, Chicago, Illinois; Fred H. Albee of New York City, professor (Orthopedic Surgery) Cornell Medical School, New York.

ANNUAL PRIZE—CHICAGO SURGICAL SOCIETY

The first awardment of the Chicago Surgical Society's Annual Prize of \$250.00 (to some young man devoting himself to surgery in Chicago, who is not a member of the Chicago Surgical Society, for meritorious work in one or both of the fields of Experimental and Clinical Surgery) was made to Dr. Raymond F. Hedin of Cook County Hospital and the Department of Surgery, Rush Medical College. The winning essay, entitled "Polypoid Disease of the Colon: Two Proposed Surgical Procedures, Including the Description of a Colonoscope," will be presented before the Chicago Surgical Society at its May 5 meeting.

YOUNG MEN OFFERED FREE SUMMER COURSE ON TRAINING SHIP

The American Nautical Academy, National Training School for Merchant Marine Officers, Washington, D. C., announced that boys and young men between the ages of 11 and 21 years will be allowed to secure practical ship experience on board a training ship of the Academy within the period from June 1, to October 1, 1939.

The young men may remain on board ship for the entire period, or for any shorter time they may wish, but for not less than a month. Students who enter for any period less than the full course will receive instruction only in those subjects being taught while the student is on board ship.

The purpose of the course is: First, as a foundation for those who wish to become officers in the Merchant Marine, and devote their lives to a career in the service; Secondly, for those boys and young men who, though not desirous of following the sea, still wish to obtain a general knowledge of ships, and the life afloat.

There is no charge for instruction nor for living quarters on board ship. The only required expense is for meals, which are 49 cents. Three meals are served daily.

There is no tuition charge for any of the courses offered by the Academy; and no obligation for future merchant marine, military or naval service of any kind is incurred by the young men.

The schoolship to which the young men will be assigned is the Training Ship "MARSALA," a vessel of 2,422 tons, 284 feet long, 45 feet breadth, and built in 1919-20.

On Sundays the cadets will be allowed to attend divine services at the churches of their respective denominations on shore. While on board ship cadets will receive free minor first aid treatment when necessary.

This is the tenth annual summer course offered by the Academy, and will be under the personal supervision of the Captain Commandant of the Academy who will be in command of the vessel.

While on board ship the students will follow the regular daily ship routine, and will be given practical instruction in nautical subjects, including seamanship (ship's work), signaling, rowing, handling, and the use of motor boats, pulling boats, life-saving, and naval drills. Many of the duties on board ship are performed by the cadets as part of their training. They will also receive instruction in the use of life buoys, first aid, the compass, log, lead, ground tackle, and the duties of lookouts, as well as the duties of the watch on deck.

Students will join the training ship at Virginia where the vessel will be based at Hampton Roads for the summer training period.

Those completing the summer course with a passing grade will be eligible to apply for a scholarship in the Navigation Course.

Due to the fact that the number of accommodations available is limited, those wishing to take advantage of this opportunity should write at once to the

AMERICAN NAUTICAL ACADEMY,
NATIONAL TRAINING SCHOOL FOR MERCHANT MARINE OFFICERS,
WASHINGTON, D. C.

INCREASED PREVALENCE OF RABBIT
FEVER

According to a recent issue of the Illinois Health Messenger the biggest epidemic of tularemia, commonly called rabbit fever, ever recorded in Illinois ended in February of 1939. Starting early in November, 1938, simultaneously with the opening of rabbit hunting season, the disease climbed rapidly to peak prevalence in December and then declined sharply.

During the four months 501 cases were reported, 55 in November, 350 in December, 70 in January and 26 in February. This was by far the highest incidence of the disease on record in Illinois for a rabbit hunting season.

By the first of December it became evident that infection among rabbits was much more general than usual and that in the event of much hunting many persons would be exposed to the disease. The public was so advised generally through the press and otherwise by the State Department of Public Health. This, together with a rapid increase of cases among humans during the first ten days of December, resulted in an

abrupt falling off in rabbit hunting and the use of rabbits as food. Case reports of the disease among humans dropped off simultaneously and no less abruptly. About 250 cases were reported in the first half of December against about 100 in the last half.

For the calendar year of 1938 there were reported 459 cases of tularemia and 32 deaths from the disease. This gave the worst experience on record for any year. Previously 172 cases and 9 deaths in 1933 and 134 cases and 11 deaths in 1934 were the worst experiences.

Tularemia is a disease of wild animals, mostly of wild rabbits. It is transmitted to man through the blood stream, infected matter entering the body usually through an abrasion of the skin. It takes place as a rule during the process of skinning or dressing wild rabbits.

While tularemia is probably an old disease it was not recognized until recently, about 1920, in human beings. Medical officers of the United States Public Health Service ran across the infection in rabbits while studying plague in rodents. Much of the work on this newly discovered disease was done in Tulare County, California. Hence the name tularemia, referring partly to that geographical location and partly to the fact that the disease is associated with a disorder of the blood.

The first case reported in Illinois occurred in 1926. Case and death records since that time are shown in the table.

CASES AND DEATHS, TULAREMIA, ILLINOIS

Year	Cases	Deaths
1926	1	...
1927	14	...
1928	10	...
1929	36	1
1930	139	2
1931	126	4
1932	134	4
1933	172	9
1934	134	11
1935	69	4
1936	91	6
1937	109	5
1938	459	32

POSTGRADUATE COURSES IN OBSTETRICS
AND PEDIATRICS TO BE REPEATED
AT THE UNIVERSITY OF ILLINOIS
COLLEGE OF MEDICINE

The Departments of Obstetrics and Pediatrics of the University of Illinois cooperating with the staffs of the medical schools of Chicago and the State Department of Public Health, will again offer to physicians of Illinois an intensive one week's course in obstetrics and pediatrics at the Research and Educational Hospitals. The course begins each Monday morning at nine o'clock and ends at noon on Saturday. The courses begin July 10 and end with the week of August 28.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9 A. M.	Lecture Obstetrics	Lecture Pediatrics	Lecture Obstetrics	Lecture Pediatrics	Lecture Obstetrics	Lecture Pediatrics
10-12 A. M.			Obstetrical Dispensary Pediatric Dispensary			
	ROUND TABLE DISCUSSIONS					
1-2 P. M.	Obstetrical Subject	Pediatric Subject	Obstetrical Subject	Pediatric Subject	Pediatric Subject	
2-4 P. M.			Ward Walks—Research Hospital Obstetric—Pediatric			
4-5 P. M.	Manikin	Obstetrical Consultation Hour	Pediatric Consultation Hour	Manikin	Preparation of Diets for Infants	
5-6 P. M.	Manikin			Manikin		
6 P. M. to 4 A. M.			Deliveries Home and Hospital			

As seen by the schedule, the course will be of practical value to the family physician. It will include bedside clinics, antepartum and postpartum care, manikin, demonstrations, didactic lectures, care of the newborn and premature infant, child-health problems, immunization procedures, and round table discussions on many important obstetric and pediatric problems.

The staff members of all Chicago Medical Colleges are participating in giving the course and will include such Obstetricians and Pediatricians as Doctors W. C. Danforth, F. H. Falls, F. L. Adair, Joseph Baer, A. F. Lash, W. H. Browne, Charles Newberger, Julius Hess, Clifford Grulee, Arthur Parmalee, Isaac Abt, Maurice Blatt and H. E. Irish. Opportunity is given for individual consultation work with many of these men.

The registration is limited to 20 each week. Physicians outside Chicago are given preference. Physicians are urged to make their reservations early as experience has shown in the last two years that the courses have been given, that the places will be filled rapidly. A limit is placed on the class number in order to preserve the conference type of instruction that has been so enthusiastically received by the physicians attending in the past two years.

The registration fee of \$10.00 is the only fee required. Application should be accompanied by the registration fee and should be sent to Mr. G. R. Moon, 1853 West Polk Street, Chicago, Illinois.

APPLICATION BLANK

Name.....M. D. Age..... Date of Graduation.....
 Street AddressCity.....
 Member of.....County Medical Society (not required)
 Registration Fee \$10.00.
 1st choice—week of

2nd choice—week of

3rd choice—week of

Excellent living accommodations can be obtained at the nearby students' Y. M. C. A. at reasonable rates.

AMERICAN MEDICAL ASSOCIATION ANNUAL CONVENTION

St. Louis, Mo., May 15th to 19th, 1939

For the comfort and convenience of members, their families and friends, we have selected the ALTON RAILROAD, which is the only completely double tracked line operating a fleet of twelve trains daily (four of which are Streamliners) between Chicago and St. Louis, as the Official Line to the Annual Convention of the American Medical Association, to be held in St. Louis, May 15th to 19th, 1939.

We have chosen the New Diesel-Electric Powered Streamlined train, The ABRAHAM LINCOLN, which leaves Chicago at 4:50 P. M., CT, 5:50 P. M. Daylight Savings Time, Tuesday, May 16, arriving in St. Louis at 9:45 P. M. CT, as the train which would be convenient for most of our members.

All trains are air conditioned. The ANN RUTLEDGE and the ABRAHAM LINCOLN are new Streamliners, the latter being Diesel-Electric Powered. The ALTON LIMITED is equipped with modern standard cars, all trains offering the latest in travel comfort including Parlor Cars, Lounge-Observation and dining cars, serving good food at moderate prices. Regular daily service is as follows: (From Union Station Chicago to Union Station St. Louis):

	Ann Rutledge	Alton Limited	Abraham Lincoln	The Mail	Fast Mail	Midnight Special
Lv. Chicago, CT.....	8:30 am	11:40 am	4:50 pm	6:45 pm	11:30 pm	11:59 pm
Ar. St. Louis, CT.....	1:45 pm	5:10 pm	9:45 pm	1:20 am	6:45 am	7:45 am
	Abraham Lincoln	Alton Limited	Prairie State Express	Ann Rutledge	Fast Mail	Midnight Special
Lv. St. Louis, CT.....	8:58 am	11:55 am	2:45 pm	4:30 pm	11:45 pm	12:30 am
Ar. Chicago, CT.....	1:53 pm	5:25 pm	9:05 pm	9:25 pm	6:30 am	7:45 am

The round trip Pullman class fare between Chicago and St. Louis is \$13.15. Round trip day coach fare is \$11.35 with a 30 day final limit. Pullman fares between Chicago and St. Louis are as follows:

Parlor Car Seat	Lower	Upper	Com- partment	Drawing Room	Single Bedroom	Double Bedroom
\$1.05	\$2.65	\$2.00	\$7.35	\$9.45	\$4.75	\$5.25

Members and families of the various Local and State Societies, as well as members of the various associations affiliated with the American Medical Association are cordially invited to join our group.

You are urged to make your reservations early so that the proper style of equipment can be assured for your comfort.

Make your arrangements to travel with us and enjoy the privilege of traveling with your professional friends en route.

Mr. M. D. Taylor, C.P.A., Alton R. R.,
105 W. Adams Street,
Wabash 2211, Local 311,
Chicago, Illinois,

Chairman. Train Arrangements.

Frank P. Hammond, M. D., Chairman,
Homer K. Nicoll, M. D.,
Frank F. Maple, M. D.,
Transportation Committee.

"INDICTING THE DOCTORS"

(Springfield, Mass., *Union*)

"... A first impression, and one which the public will undoubtedly share quite generally, is that the Department of Justice has used a butcher's cleaver where a tempered blade would be more suitable for the purpose."

"That purpose is to forward the Government's group insurance program to do which it is willing to frighten and malign highly respected medical associations and a distinguished group of able and honorable physicians and officials. We have in this rough-shod procedure one of the best examples yet produced of the New Deal's reckless and ill-considered methods of achieving its ends."

"This is entirely aside from the merits of the question in dispute on which there are sincere and legitimate differences of opinion. . . . What the highly respected A. M. A. insists upon is that thorough study shall first be made of plans which can be made to work effectively and efficiently with a minimum of Federal control."

"The medical profession is working out plans that will be practicable and equitable. They require time. The present Administration has given us many examples of hasty experimentation which have worked out badly and proved costly. In the field of medicine the more scientific approach is not only desirable but imperative, because the public welfare is vitally concerned."

The *New York Herald Tribune* of Dec. 22, 1938, says in part: "With this indictment Mr. Thurman Arnold has fired the second gun of his campaign to regulate the vexed question of 'group medicine' through the unlikely instrument of the anti-trust laws. . . . If, as he hopes, Mr. Arnold gets a consent decree regulating the Washington situation alone, it will leave the Department of Justice with a kind of discretionary power over medicine it is hardly competent to exercise. If the case is fought through the courts, as the medical association promises that it will be, it must end either in victory for them, which would leave everything as before, or a defeat which might very gravely jeopardize

their invaluable function of generally policing the profession. Now, however, that the battle has been joined, it will have to be fought out, and perhaps the air will be somewhat clearer when it is over."

"DOC" INDICTED"

(*New York World Telegram*, Dec. 21, 1938)

"... This touches not only every doctor but every other son of man who has been afflicted with any ill to which flesh is heir, from belly-ache to coronary thrombosis. . . ."

"Without seeking to try the case or to restate all the issues set forth by the District of Columbia Grand Jury, we do want to say this about 'Doc':

"Whether he be on one side or the other in this controversy between the A. M. A. and the group health associations, we think that medicine, of all occupations, is least motivated by the acquisitive impulse. We've all needed Doc. We all have been willing to give our shirt and the fillings from our teeth if he would only come right now, and then we all have kicked about his bill if it was more than \$2 after we got well."

"The very nature of his work—the strange ambition which makes one human being want to spend seven or eight years learning the anatomy of other human beings in order to keep their microbes on straight—has always been a mystery to us. From the old country doctor to the most modern steam-heated specialist, it's service that can't, by its very nature, be essentially mercenary. Commercially you could go farther and acquire more, applying the same amount of energy, and intelligence, in the shoe business, where the telephone doesn't ring in the middle of the night."

THE CRUCIAL TEST

It is easy enough to be pleasant

While life flows by like a song,
But the man worth while is the one who will smile
When everything goes dead wrong.
For the test of the heart is trouble,
And it always comes with the years,
And the smile that is worth the praises of earth
Is the one that shines through tears.

It is easy enough to be prudent

When nothing tempts you to stray,
When without and within no voice of sin
Is luring your soul away.
But it is only a negative virtue
Until it is tried by fire,
And the life that is worth the honor of earth
Is the one that resists desire.

By the cynic, the sad, and the fallen,
Who have no strength for the strife,
The world's highway is cumbered today:
They make up the items of life.
But the virtue that conquers passion,
And the sorrow that hides in a smile,
It is these that are worth the homage of earth,
For we find them but once in a while.

ELLA WHEELER WILCOX.

Original Articles

EVALUATION OF THE NEWER TREATMENTS OF DEMENTIA PRAECON

D. LOUIS STEINBURG, M. D.,

GERT HEILBRUNN, M. D.,

ERICH LIEBERT, M. D.

ELGIN, ILLINOIS

The active treatment of dementia praecox has received considerable impetus in the past three years, due mainly to the introduction of insulin shock and metrazol therapy. Both forms of treatment have been used extensively in all countries and the results as reported by most authors are very favorable. Their statistics compare closely and their figures are considerably higher than those usually accepted as the spontaneous recovery rate of dementia praecox, which ranges between 15-30 per cent.

To date there are no reports of large numbers of cases from any institution in which both treatments have been carried out simultaneously. At the Elgin State Hospital insulin and metrazol therapy were instituted about one month apart in the spring of 1937, and to date we have treated 120 dementia praecox patients with insulin and 300 with metrazol.

Insulin-shock therapy and artificially induced convulsions, clinically seem to show no similarity, either in their somatic manifestations or in their duration of action, the reaction to insulin being allowed to continue for three hours or more, while the effect of metrazol appears superficially to be of much shorter duration.

However, more intensive study of the action of both agents indicates a close similarity in many respects. It has been stated that the insulin seizure occurring during shock is in its therapeutic value comparable to the results obtained with treatment by the artificially induced convulsions. In our own material we observed no beneficial influence attributable to the occurrence of the seizure during insulin treatment. We were unable to substantiate this theory expressed in the literature. This seems to be paradoxical because we know that in metrazol therapy the convulsive reaction is a very essential component. Failure to obtain a convulsion during metrazol

treatment has a deleterious effect on the patient insofar as it produces a state of anxiety, at times bewilderment, or even a delirious state, which may last for many hours and give rise to psychotic interpretation of this experience.

The convulsive reaction in both therapies is quite similar. Pollock et al.¹ have observed that the metrazol convulsion follows a clonic-tonic-clonic sequence and thus "indicates a complete and intensive reaction of the central nervous system." Our observations of the convulsion occurring in patients during insulin treatment show the same sequence of events. The convulsion in both therapies is probably produced by marked anoxemia of the brain. Dameshek, Myerson and Stevenson² have shown that a severe anoxemia occurs during insulin hypoglycemia. Gellhorn³ also states that in hypoglycemia the rate of oxidation in the central nervous system is greatly reduced. Himwich et al.⁴ demonstrated that the oxygen available for combustion was greatly decreased during the action of metrazol.

We have studied the effect of metrazol on the blood vessels in the brains of rats and have observed that a marked contraction of the blood vessels takes place, giving rise to severe pallor of the surface of the brain. In curarized rabbits, using thoratrast as a contrast medium, we were able to demonstrate by rapid serial x-ray exposures of the experimental animal, a decrease in the caliber of the blood vessels of the brain after the injection of metrazol. According to Sellbach,⁵ in rabbits the blood vessels of the ear and eye ground become invisible after the injection of metrazol. Direct inspection of the brain in insulinized rats also showed a repeated pallor of the brain at frequent and short intervals.

All these findings point to a severe alteration of the metabolism of the central nervous system, which changes may be so severe that demonstrable pathological damage occurs, as reported by Weil and his co-workers.⁶ These changes were observed in experimental animals subjected to insulin and metrazol injections. However, these animals had to be greatly overdosed before definite and irreversible pathological changes in the brain could be demonstrated. Similar pathological findings have been reported in patients who died during or shortly after insulin-shock therapy.

In humans we were able to demonstrate spe-

Read before Physicians' Association of Department of Public Welfare, State of Illinois, at Meeting of Illinois State Medical Society, May 17, 1938, at Springfield, Illinois.

From the Elgin State Hospital, Elgin, Illinois.

cific substances in the blood serum, which prevented hemolysis in a hemolytic system when white matter of the brain was used as antigen. These substances occurred in many patients of both groups, and seemed to increase in quantity with the prolongation of treatment. We are inclined to interpret the positive reaction as an indication of a breaking down of nerve substances during treatment.

The blood sugar level has been studied in insulin as well as in metrazol treatment. The hypoglycemic effect of insulin is well known. Observations on metrazol-treated patients showed that during the short interval between injection and the occurrence of a seizure the blood sugar level showed a definite tendency to drop. This hypoglycemic effect in most cases ranges from 5-10 mgs. per cent., in some cases as much as 18 mgs. per cent. This hypoglycemic tendency lasts only until the occurrence of the convulsion. With the convulsion the blood sugar level begins to rise sharply and within one-half hour after injection usually reaches a higher level than the original; within 2½ hours it tends to approximate the starting point. These findings confirm the sugar values as reported by Georgi and Strauss.⁷

Observations on the oxygen consumption rate show a marked rise during the insulin shock and after the metrazol convulsion. In both instances this increase was about 40 per cent.

Both treatments have a marked sympathetico-tonic effect. This stimulation has been thought to be related to the marked anoxemia occurring during both treatments. Gellhorn³ concluded that "these treatments are effective because they produce, by a profound alteration of the metabolism of the central nervous system, a sufficiently long and lasting excitation of the sympathetic nervous system." Such stimulation is also evidenced by the marked rise of the vasoconstrictor substances found in the blood during the action of metrazol, as well as insulin. The assumption that the stimulation of the sympathetic nervous system is the only factor in producing the psychic change in the patient seems to be questionable to us because high doses of thyroxin over long periods of time, with marked effect on the sympathetic nervous system, did not produce any favorable change in the psychotic picture in dementia praecox patients. This observation, of course, does not mean that the stimulating effect

on the sympathetic nervous system, which occurs during insulin and metrazol treatment, is of no value as far as mental improvement is concerned.

The above emphasizes many points of similarity between the two types of therapy, but still there are some fundamental differences—the hypoglycemic shock with its severe changes in carbohydrate metabolism, leads to a depletion of the available glycogen in the liver, which influences the entire metabolism of the body over a long period of time. The metrazol convulsion is briefer in action and produces a large amount of lactic acid, resulting in a high acidity of the entire organism—a pH reading of 7.17 is not uncommonly low as 6.82 has been observed. In insulin shock the acid base balance shifts to the alkaline side, due mainly to the loss of chloride. Thus, in spite of the many corresponding resemblances, there are many fundamental divergent actions.

Material. It may be too early to compare both treatments at this time, due to the relatively small number of cases treated, and the short period elapsing since treatment was concluded; however, it seems that such an evaluation is desirable in order to gain some perspective as to how these treatments compare with each other. Such an evaluation should come from one clinic in which both treatments are carried out simultaneously, because in this way the standard for judging improvement and the observer will be the same for each series.

We want, however, to emphasize the fact that patients with a well integrated prepsychotic personality with a duration of psychosis under six months, were preferably treated with insulin as it had been shown in previous reports that insulin is of meagre value in patients ill for a longer period of time. Insulin therapy requires a larger personnel and a more elaborate set-up than that necessary for metrazol treatment. The majority of recent cases will be found, therefore, in the insulin group, while the majority of old cases have been treated with metrazol.

Results. A group of 120 cases of dementia praecox patients was treated with insulin; of these 35 had been ill for six months or less, and of this number 29 or 83% recovered. Two or 6% made a social remission. This gives a total remission rate of 89% for this group.

In the group of patients ill from 7-18 months,

37 patients were treated with insulin; of these 19 or 51% recovered; five or 13% made a social remission, giving a total remission rate of 64% for this group.

Thus, of 72 patients, ill not over 18 months, 48 or 67% recovered and seven or 10% showed a social remission—a total of 77%.

In the third group we include all patients ill from 19 months to five years. There were 48 patients treated; only one or 2% recovered; seven or 14% made a social remission.

Three hundred cases of dementia praecox were treated with metrazol. Of these, 19 patients were ill less than six months; eight or 42% made a complete remission; six or 31% made a social remission—a total of 73% for this group.

In the group of patients ill from 7-18 months there were 46 patients treated with metrazol; of these ten or 22% made a complete remission; seven or 15% showed a social remission, giving a total of 37%.

Combining groups I and II we have a total of 65 patients, of whom 18 or 27% recovered and 13 or 20% made a social remission, a total rate of 47%.

In the group of metrazol-treated patients ill from 19 months to five years there were 146 cases; of these 11 or 7.6% made a complete remission; six or 4.1% made a social remission, together giving a total of 17 patients and a 11.7% remission rate. Of 89 patients ill over five years no complete or social remissions were obtained.

The statistical comparison shows a definite superiority of insulin treatment so far as complete remissions are concerned, while the social remissions are more numerous with metrazol treatment.

In the first two groups under 18 months in duration the percentage of complete remissions was 40% higher with insulin than with metrazol, while in social remissions the results with metrazol were 10% higher. That means that the remission rate is 30% higher with insulin than with metrazol.

In patients ill longer than 19 months the recovery rate is greater with metrazol than with insulin. The complete remission rate in insulin treatment is 2%, while with metrazol treatment it is 7.6%. This difference might possibly be due to the greater number of cases in the metrazol treatment group.

Metrazol seems to be of more value in producing institutional improvements. Of the 300 patients treated, 110 or 37% showed an amelioration of their symptoms, while in the insulin group slight or institutional improvements occurred infrequently.

It is interesting to compare the effect of both treatments on the different sub-groups of dementia praecox.

In the paranoid group 86% of recent cases recovered with insulin, while with metrazol, only 40% showed a complete remission. In the catatonic group 62% remitted with insulin, as compared with 50% of those treated with metrazol. In the second group (ill from 7-18 months) also, considerably better results were obtained in the paranoid cases with insulin than with metrazol; however, in the third group ill over 19 months, metrazol was slightly superior to insulin in the paranoid type, showing a 6.3% of remissions, as compared with 3.6% for insulin. The same is true with the catatonic and hebephrenic types: 10% of the catatonics and 6.8% of hebephrenics showed a complete remission with metrazol treatment, while with insulin no results were obtained.

Relapses. Relapses occurred in both treatments. By relapse, we mean those patients who had made a complete recovery or social remission, but were unable to maintain this level. Usually the symptoms presented by the relapsed patient are milder than those observed before the treatment was introduced.

In the insulin group there were five patients who relapsed after several months. Treatment was re-instituted and two of these again made a complete remission, which they have maintained to date. One patient improved and one patient showed no further response with continued treatment. The fifth patient was not returned to Elgin.

Of the metrazol group, one patient relapsed, and after ten more convulsions again showed a complete remission, and has maintained it to date.

Combination and Alternation of Treatment. We have in some patients tried to produce a remission by combining metrazol with other therapeutic agents, such as hyperpyrexia, insulin, sodium alurate and benzedrine. We could not observe any beneficial effect from these combinations. Insulin, alone, and metrazol, alone, seem to us to be preferable therapeutic agents for de-

mentia praecox at the present time, insulin being the choice, especially in early cases.

Some patients who failed to respond to one type of therapy were shifted for further treatment with the other agent. Thus 17 patients who failed to respond to metrazol were treated with insulin and 20 patients who showed no improvement with insulin, were given metrazol treatment.

The results are very encouraging as far as recent cases are concerned. Four cases out of six patients who had been ill less than 18 months benefited from such alternation of treatment. In the remaining 31 cases only one patient reached a social remission level. Therefore, we recommend this procedure in recent cases, while in older cases the results are not promising.

Complications and Contraindications. The complications encountered in both therapies are quite different.

In the metrazol treatment, the most common complication is the dislocation of the mandible. Fractures occurred in three patients (two fractures of femur, one fracture of the humerus) and dislocation of the humerus in two.

In the insulin group various neuropathological symptoms were encountered. Three patients developed a hemiplegia; two were transitory in character and accompanied by aphasia, while one patient still shows some reflex changes and slight facial palsy, of which she, herself, is not aware. One patient reacted with a coma lasting for 60 hours, from which he recovered completely.

The contraindications for both methods are in the main the same. It is obvious that patients suffering from cardio-renal-vascular disease, tuberculosis, or acute infectious processes should not be subjected to either form of treatment.

CONCLUSIONS

1. The physiological action of metrazol and insulin in the treatment of dementia praecox patients is similar in many respects, but there are fundamental reactions specific for each type of therapy.

2. Insulin therapy in patients ill less than 18 months shows a higher remission rate (30%) than in a similar group treated with metrazol.

3. In the chronic group metrazol gave better results than insulin.

4. In our material the response to either therapy does not depend on the particular type of dementia praecox.

5. Alternation of these treatments in patients who did not respond to insulin or metrazol alone, proved to be of value in recent cases.

6. Combination of these agents with other therapeutic measures gave no beneficial results.

DISCUSSION

Dr. Francis J. Gerty, Chicago: Dr. Steinberg and his associates are to be congratulated on attempting this piece of work. My own feeling is that one would have to be endowed with the gift of prophecy to truly evaluate these treatments in schizophrenic conditions. The etiology and pathogenesis is in a worse than doubtful state. The classification and diagnosis, dependent upon description of symptoms, are still open very much to question.

The possible psychogenic origin has to be considered. There is undoubtedly an element of mental shock in these treatments. Besides, transitory changes in the physiology and chemistry of the body have to be considered. Last but not least, we have to consider definite pathological alterations in the central nervous system, as demonstrated by a good deal of recent work and confirmed by experience with patients who have shown some unfortunate results, particularly with insulin treatment. Some of the findings indicating pathological changes have been pointed out by Dr. Steinberg in his paper.

Naturally the attempt to evaluate in the face of such fundamental difficulties is going to be very great.

As to the question of whether it is worth while attempting evaluation at this time, of course we can compare the results of treatment by these means with the spontaneous remissions that have been secured in the past. There is a good deal of objection to that sort of thing. In the first place, classifications and standards of diagnosis in the past were not exactly the same as now. I have no doubt that many patients who recovered in the past were placed in the manic-depressive group because they recovered. I think we have a much more liberal attitude toward the recovery in schizophrenic conditions now than we used to have. We are more willing to admit people may have remissions of schizophrenic psychosis. Furthermore, as to the sub-groups of schizophrenic cases, opinions vary very much, particularly with regard to paranoid types.

I know of psychiatrists who will not make a diagnosis of paranoid schizophrenic condition based merely on persecutory delusions and hallucinations, especially during the acute stage. They feel they do not belong in that group. So when you attempt to evaluate the results of treatment you have a great deal of difficulty.

I would suggest for a method of study in these cases rather close recording of facts. We should be slow to accept terms that indicate conclusions as to the classification of the disease, and the various other matters that we are too prone to include in our tables

Note: We wish to acknowledge our appreciation of the interest and encouragement given us during the progress of this work by Dr. Charles F. Read.

of results. To do this might postpone knowledge of the true results for a very long time, but I feel it is the only way we can get to the root of the matter.

Dr. Franz Alexander, Chicago: I have very little to add to the very instructive discussion of Dr. Gerty and the very instructive paper. I think everyone is interested in the new pharmacological treatment of schizophrenia. As I am not actively working in this field, I may be considered—if there is such a thing—as an objective observer. I would like to summarize briefly my impressions of this paper, of the literature and the methods of some of my colleagues working actively in this field.

I think this new research brought about three types of contributions in schizophrenia research. The first and most valuable contribution, I believe, is the fact that in the early cases both insulin and metrazol may induce remissions. The second contribution, not well established, pertains to the curative value of these treatments. The question is to what degree these remissions can be considered as permanent cures. The third and less valuable contribution is the different attempts at explanation as to the physiological effect of these drugs. It is not probable that we deal here with a very highly specific effect.

Insulin was introduced first, then metrazol, an entirely different drug in many respects with fundamentally different physiological effects, which bring about similar results. Comparing these results with some other remissions obtained by traumatic external stimuli again speaks for the non-specificity.

Usually when a new discovery is made old contributions are forgotten. Remissions are well known caused by sudden shock effects brought about on a psychological basis, which was used by old psychiatrists. I do not say this is a method very useful or helpful, but rather authentic reports are made as to remissions.

We know also that intercurrent organic diseases very often may bring about remissions and we should not forget those very interesting observations which probably everyone dealing with schizophrenics psychiatrically not only pharmacologically, observed, that certain psychological stimuli have high specificity: the mentioning of a name, a place, in the presence of a patient unintentionally, which the patient overhears, may bring about a temporary remission. This remission may be of short duration.

If we consider all these facts, we have the feeling that one does not deal here with specific effect but with a psychological shock effect which is brought about by chemical means. Before we go into any speculations, one must not forget the possibility that here we might deal with a chemically produced psychic shock effect counteracting psychological experiences which might have driven the patient into schizophrenia.

I must emphasize again the danger which this very promising field involves, namely that we suddenly forget well known and well established psychiatric concepts, namely that certain types of schizophrenia are reactions of the personality, probably of a constitu-

tionally predisposed personality to life experiences.

This pharmacologically-induced shock effect might be considered a new psychological experience, a very profound one, a very thorough one which counteracts those emotional experiences which drove the patient into schizophrenia. The danger is that many workers in this field come from pharmacology and physiology and have no psychiatric background and may disregard the psychiatric experience in this field which shows that there are definite emotional developments typical for schizophrenia. After all, schizophrenia is a very deep disturbance of the total personality and it is difficult to assume that a permanent change could be brought about by an acute physiological shock effect.

So one must not entirely disregard the possibility that we deal with a reaction of the personality to the experience of the shock therapy. The shock effect brought about by chemical means as compared to other psychological shock effects, I would say, would be a bomb filled with dynamite compared to a bomb filled with gas. Here we have chemically produced a shock effect very deep, continuous and thoroughgoing which was never before introduced in such a consistent manner, which may create a terrific deep going psychological reaction in the patient. There is the war experience that shell shock neuroses can be cured by very painful electric shock treatment. This is based obviously on the fact that the treatment, being much more painful than the fear of the front, the patient under pressure of the painful treatment is pulled out of the hysterical condition, to be sure not of malingering. The physiological theory of this treatment of hysteria is now disproven and nobody assumes any longer that the painful electric shocks create a change in the brain cells.

We must be cautious at present in making theoretical explanations, because we do not know whether we deal with very specific physiological chemical reactions or a deep going psychological effect. I agree with Dr. Gerty that the next step is not only careful physiological analysis of the cases but also a careful psychological study to establish the personality changes that take place during the shock therapy and during the remissions. I am, therefore, very much interested in the project of Dr. Read, who is planning to make such a systematic study of schizophrenic patients.

Isidore Finkelman (Chicago): Mr. Chairman, Ladies and Gentlemen: It is hazardous to draw etiologic conclusions from therapy. Recently I have had a successful result with metrazol shock therapy in a woman of 59, ill for two years, presenting psychiatric symptoms that fit in with a diagnosis of presenile psychosis. The reason that I cite this case is that one cannot say that metrazol shock therapy, or perhaps insulin too, is of value only for dementia praecox.

The phenomena that occur in the central nervous system as a result of insulin or metrazol shock therapy can be best explained by Monakow's concept of diasthesis or cerebral shock. Monakow believed that the sudden interruption of function of a given part of the

brain causes a shock to all those structures connected with the damaged part by fiber paths or systems. He believed that this shock caused a temporary cessation of function of the connected structures.

In the case of metrazol shock therapy there is a profound physiologic disturbance at the site of action of the convulsant which in turn causes a cessation of function of "centers" and associative pathways which stand in definite relation with the affected site. The convulsive phenomena are of secondary importance in the production of this cerebral shock since it may be produced by insulin with or without a convulsive seizure. When restitution takes place the ideational patterns may not follow the previous pathways.

Roland P. Mackay (Chicago): My experience with insulin therapy has emphasized the dangers which lie in this method. There are certainly ominous neurologic changes which are not due to overdosage. A patient now under my care in a peurperal schizoid state received very moderate doses of insulin. During the apparently ordinary "wet shock" which she experienced, she exhibited Babinski reactions, which persisted until she began to emerge from her coma. Although those changes disappeared when she recovered consciousness, they impressed me as being ominous and seemed to indicate that very definite organic changes of an important type were taking place.

Another interesting feature was the definite cyanosis which was observed in this patient during the shock, in spite of her normal cardiovascular system. Cyanosis of this degree, prolonged for one or two hours, might indicate a degree of anoxia injurious to the central nervous system. We must be cautious lest we do our patients definite physiological harm, and should observe and record facts rather than to attempt to theorize prematurely.

Dr. Steinberg: I wish to thank the discussants for their valuable remarks and suggestions. We did not attempt to draw any definite conclusions regarding the therapies at this time; we merely wanted to compare them in order to obtain some information upon which to base further studies and investigations. In spite of the relatively small number of patients, we think that such a report might be useful. That either of these therapies is of value in the treatment of dementia praecox, I believe no one will question.

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MEDICAL CARE FOR ALL THE PEOPLE

R. K. PACKARD, M. D.

CHICAGO

Dr Leland has covered a considerable portion of this subject, and it does not leave a great deal for anyone to say. I think it is important for us to remember that there has been a great deal of agitation on the part of the American people for some change in the practice of medicine, but no one up to the present time has been able to set up any plan they think would be applicable to a solution of this subject, unless it was some form of socialized medicine or insurance medicine which we know, as Dr. Leland has stated, has been a failure in the countries where it has been in operation. I think the subject of adequate medical care to the American people is an important subject; it is constantly going to be a fluctuating subject or a fluctuating condition. And it is going to fluctuate just as the economic condition in the United States fluctuates; that is, in periods of great prosperity we are going to have less trouble in the problem of rendering adequate medical care to the American people than we are in periods of great depression when we run into not only a large number of indigent people, but we also run into an increased number of so-called low income groups. I think most of the studies that have been made of the subject of adequate medical care to the American people have found perhaps two things that we might agree to. First, they have found there are sparsely settled communities in the United States where adequate medical care is not at all times available to the people, due to the sparsely settled community and the long distances of travel to the facilities for medical care. Second, I think we will agree that there are certain impoverished communities in this country in which they do not have the facilities for medical care. Some of these communities are not only impoverished from the standpoint of financial stability but, as Dr. Leland stated, they are impoverished as regards their sense or understanding of what

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adequate medical care means. And in some of these communities we find that the people are not very much interested in adequate medical care, and in those instances it remains purely a matter of carrying education to those groups. And, finally, I believe we do find a certain group of low-income people that fluctuates with economic conditions that, because of the high incidence of disease in certain periods of time, are not able to afford adequate medical care. I do not believe it is possible to state what income should be a basis upon which an individual or family can have adequate medical care. Studies that have been made show very definitely that an income may be what we would consider a fairly good income and yet, with a large family with a high incidence of disease within a few months, that family even with what we might call a suitable income are not able to afford adequate medical care in that given period of time.

Now, it is perfectly obvious that the medical profession cannot do anything about sparsely settled communities. We can't resettle these communities. We can't do anything about impoverished communities as far as their financial status is concerned. If their attitude towards adequate medical care is not what it should be, then, I think the function of medical organization is to carry a program of education to those people so they may be educated as to what adequate medical care really means in this country.

When we come to discuss the low income group and their need for adequate medical care, it has always seemed to me that we must discuss the relation of capital and industry to this particular problem, because it is not the problem of the medical society to raise income. It is not the problem of the medical society to state what management should do in capital or industry. But I do believe that it is one of the responsibilities of capital and industry to assume the responsibility of paying a wage to the great majority of people that will make it possible for them to have adequate medical care. I make that statement because of the period of great prosperity between 1920 and 1930. We see much in the public press about the high cost of medical care, and we often see management challenging the high cost of medical care, saying that a large percentage of the American people could not afford adequate medical care because of this high cost. Well, now, the committee on the cost

of medical care did not find that the cost of medical care was too high. They agreed that the cost of medical care was not too high. They did state that there were a large number of people, because of the low income group, who could not pay for medical care. So, I go back to the responsibility of management and say that if, during the period of great prosperity between 1920 and 1930 they were not able to pay a wage during that period that would allow the average American worker an income sufficient to provide for adequate medical care, then I think I would have to come to the conclusion that there is something wrong in the long run of management of capital and industry in this country. I would like to say one thing more, that during that great period, if you will recall, when capital and industry were stating that the cost of medical care was too high, we had companies declaring large stock dividends, large cash dividends and created a spirit of gambling on the part of the American people, labor and all. Management of capital and labor brought about some of the conditions that we have in this country today. I don't want you to misunderstand me at all. I am a firm believer in the capitalistic system. I am only pleading for better management and a greater responsibility of management of capital and labor. It might have been possible for management to have set up some plan, either in increased wages or some other form of assurance to labor that would have used a reasonable portion of their surplus funds, and that might have had much to do with the prevention of the great crash that we had and some of our economic troubles at the present time in the large indigent load we have to carry in this country. Certainly, if there is any solution to the low income group situation, that solution must come from management rather than from the medical profession.

In the State of Illinois we have already appointed a committee, as Dr. Leland suggested, to make this survey. In the city of Chicago a special committee has been appointed because of the enormous task of making that survey in the city of Chicago. I think the most important thing we have to do is to complete this survey, but we must not only fill out these blanks and get them back to the American Medical Association, but we must complete this survey so that it is as true and as accurate a survey as is possible to obtain, because the value of it is going to

depend to a large extent upon the accuracy of this survey.

I want to spend just one or two minutes in talking about one or two plans that we have run across in the last few weeks, where I believe they have to a partial degree solved the problem in the local county medical societies of rendering adequate medical care to all of the people in their community. I wouldn't say I agree at this time with all of the procedures in either one of these plans, but at least both of these plans have solved the problem for the communities they serve. One is in Sedgwick county, Wichita, Kansas, in which the county medical society has assumed the responsibility of rendering adequate medical care to all the people in that county. In that plan, there is a fund available for relief; that is, that portion which is available for medical relief is paid directly to the county medical society. That county medical society uses this fund for the operation of the county society. The members in that county are taking care of the indigent for no pay, using their funds, as I said before, for the operation of the county medical society and the activities in that county. They have stopped all charity work in that county. The hospitals that had any plan for charity work have been asked to stop that. All of the people who are on relief go directly to the clinic for medical care, and the doctors in the county serve in that capacity. If it is necessary to make house calls, they are made on the same basis. It so happens in Sedgwick county that the plan works out fairly good, because a large percentage of their work is done at the county hospital. In that county all the indigents are taken care of in the county hospital. They have a building they rented in which they have fitted up a clinic, in which the doctors spend a certain number of hours each week in rendering medical care to the indigent. Most of that work, however, at the hospital and at the clinic is carried on by three resident physicians at the county hospital, who are on the payroll of the county. They told us there that the residents of the county hospital do about 80 per cent of the indigent work, and that the doctors do the remaining 20 per cent. No one in the low income group or who is on the payroll, even on a WPA job, can go to the county hospital or the clinic for medical care. They must go to the county medical society building where social workers are engaged under the direction

of the county medical society, and, incidentally, the community fund in Wichita pays the salary of these social workers. She collects data on that family regarding their rent, their income, the number of children, etc., and then sends that information to the family doctor, and allows the family doctor to state the fee which he thinks that individual ought to pay for medical services. If it is perfectly obvious from her examination that that individual cannot pay any fee at all, that they are entitled to charity, then that is reported to the county medical society, which passes on it. If it is her opinion that those individuals are not in the low income group, they are told to go to their doctor and make their own arrangements, that they are well able to pay for medical care.

Now, the result of that program has been to solidify the community to the idea that medicine can be trusted, that medicine has furnished leadership, and all the papers, the county commissioners, various service clubs, various churches and organizations take their medical problems immediately to the county medical society. One bad feature of this plan is that the doctors who are doing this work are not receiving any pay for the care of the indigent in that particular county.

Now, another plan I want to discuss briefly is the one in Pontiac, Michigan, which they have organized somewhat on the same basis. They appointed a doctor or elected a doctor to have charge of this work. They approached the authorities that allocated the funds for indigents in Pontiac, Michigan. Previous to that they had the county physician do the work. The same was true in Wichita. Previous to that they had the county physician do the work. They didn't know what it would cost them to run this plan in Pontiac, Michigan. Finally the supervisor of the fund said, "I will not allow more than ten per cent of the total fund allocated for relief purposes for medical care." And they started out on that basis. Up to the present time the highest amount they have used in any one year has been seven per cent. They have kept it under what they previously had stated they would do. Now, the doctors in this instance are paid for rendering care to the indigent. They are paid on a reduced fee basis. The patient is allowed free choices of a physician in this plan, and the number of calls that can be made on a

chronic case or acute case are regulated by the county medical society. The county medical society polices its own members to the extent that they see to it that they do not make calls that are unnecessary or charges that are out of line for the type of work that they are doing. They also have another plan there for medical relief for the low income group; not the individual who is indigent but the individual who is on a payroll and whose income is so low that he cannot afford adequate medical care. They allocate medical relief to that individual. He is taken care of under the same plan and the doctor is paid for the service of taking care of that individual.

Obviously, there are a great many details to these plans that time does not permit us to discuss but I bring them to you in line with what Dr. Leland has stated.

If this survey and this study is to be of value to the medical profession, to be of value to the American people, we must not only make the survey but studies must be made and programs instituted that are going to care for the peculiar conditions in any given locality. It has been demonstrated that it can be done with some degree of satisfaction both to the doctor, to the governmental agencies and to the public. And, I think if we carry on this survey on the basis that we are going to correct the false statements that have been made about us, and that we are going to correct any inadequacy in medical care that we find, we will have contributed much, not only to the medical profession but to the American public.

THE IMPORTANCE OF THE BUSINESS MEETING

R. T. PETTIT, M. D.

OTTAWA

I have been secretary of the La Salle County Medical Society for about ten years. I had an idea my job as secretary would consist in writing up the minutes of the society and keeping the books, and reporting to the secretary of the State Medical Society. But I have found I have really become the business representative of the society because the secretaryship is more or less permanent and the presidency is changed every year. So, in the course of my secretarial duties I am

confronted with many community problems; the most recent one is the formation of a company for the furnishing of hospital care. An insurance man in Ottawa read an article in the Good Housekeeping magazine on hospital insurance and thought he would like to go into that business. So, he came to me as secretary of the Medical Society to ask my advice. I could not give him very much information. Therefore, I wrote to the Bureau of Medical Economics of the American Medical Association and got their report and read to him that part that deals particularly with the relationship of the medical profession to the hospital insurance plan. The statement by the American Medical Association makes it quite clear that corporations are not permitted to practice medicine, and that the giving of anesthetics, the providing of pathological service and the preparation and interpretation of x-ray films were the practice of medicine. These activities in a great many hospitals have been taken over by technicians, nurses, etc., with and without supervision by physicians.

My friend, the insurance man, drew up his by-laws, and submitted the plan to the American Hospital Association. He came back to me with a letter from Mr. Roreham, of the American Hospital Association, which stated, "1. I am very much surprised that your local group proposes to issue a contract that would exclude anesthesia, pathological and laboratory service and x-ray examinations."

Dr. Austin E. Hayden, Chicago: What is the date when he was surprised?

Dr. Pettit: April 6, 1938. Continuing: "I am very much surprised that your local group proposes to issue a contract that excludes these services. In other words, these essential services now appearing on the hospital bill would limit the benefits to such a degree that it would be hard to justify the services primarily in the interest of the public welfare. The general public are interested in having an insurance plan that will pay hospital bills and not merely give a partial credit against the cost of hospital care, particularly the unpredictable and frequently expensive items such as anesthesia, laboratory service and x-ray. No doubt, this suggestion of a restricted contract has come from local pressure."

As secretary and contact man of the county medical society, trying to direct a man of high standing in our community in the insurance business in cooperating with the medical profession along correct lines, we are following the lead of the American Medical Association. I should like to ask Dr. Leland if there is a difference of opinion and policy at present existing between the

American Medical Association and the American Hospital Association?

To proceed—at the instigation of the secretary, the president of our County Medical Society appointed a committee to confer with the insurance man, a set of resolutions were drawn up and adopted by the society and any insurance company wishing our endorsement in selling Hospital Insurance Policies will have to meet the requirements outlined in the American Medical Association report and set forth in our resolutions. The business meeting of the County Medical Society can be, as shown by this example, one of the important parts of the Medical Society Program.

Dr. Pettit, in closing: I wish to thank the gentlemen for their extensive discussion of this subject because, while we are not close to any large city, this hospital insurance question is a vital one. And Dr. Monroe has pointed out to me more clearly than ever the dangers of some of these things and what they can lead to. We have gone on record in La Salle County as to what we would endorse and what we would not, in line with the policy enunciated by the American Medical Association. That policy is in conflict with the policies of certain insurance companies and the American Hospital Association. With hospital insurance I fear the same thing will happen that has happened in automobile insurance. In former years you couldn't get coverage on your accessories, and then somebody came along and said, "If you take our policy, we will cover your accessories." Then a rival company comes forward with another policy and says, "We will cover your tires."

First it will be anesthetics, included in the hospital insurance policy, and then it will be laboratory, and the next thing it will be first aid work and then x-rays and finally everything else. I think it represents a real danger. Madison county down here is put into direct competition with St. Louis, and they are going to furnish something more; and then St. Louis will come back and furnish something better; and it comes down to a matter of commercial insurance companies competing business, using medical services as their pawns.

I hope, Dr. Leland, that the American Hospital Association can be made to see the light.

Dr. R. G. Leland, Chicago: I suspect that county medical societies and state medical societies all over the United States have been furnished with the views and literature of group hospitalization insurance promoters and propagandists. Mr. Rorem was formerly with the Julius Rosenwald Fund. About a year ago those in charge of this philanthropic organization decided that it was desirable to discontinue some of the Fund's activities. A grant of a considerable sum of money was made to the American Hospital Association and Mr. Rorem moved his office to the American Hospital Association headquarters. Mr. Davis who was the medical director (although a Ph.D.) for the Julius Rosenwald Fund, went to New York City where he founded a Bureau of Medical Research. Although the Rosenwald Fund is no longer operating from its former address in Chicago, its activities are still going on from New York City, from the American Hos-

pital Association. Group hospitalization insurance does benefit people who cannot pay the full cost when serious or prolonged illness, which requires hospitalization, occurs. This subject has received a considerable amount of attention by the Judicial Council of the American Medical Association and by the House of Delegates. The Bureau of Medical Economics has prepared several reports. The most recent report is the one to which the speaker referred. In one of its reports the Judicial Council expressed the opinion that if hospitals chose to sell their facilities on an insurance or prepayment basis, that was not the concern of the medical profession but it was definitely the concern of the medical profession if hospitals chose to include with their facilities the sale of medical services. It is largely on that point that there is sharp difference of opinion between the administrators of the group hospitalization plans and the American Medical Association. Ever since 1920 the American Medical Association has vigorously opposed sickness insurance, state medicine and socialized medicine. I am of the opinion that the sale of medical services by contract through hospital insurance corporations is the entering wedge to a more comprehensive program of socialized medicine, notwithstanding the fact that the directors of group hospitalization organizations claim that group hospitalization insurance will forestall or postpone the socialization of medicine. These contracts sold by hospitalization insurance corporations in which medical services are included merely perpetuate and accentuate certain conditions in hospitals that physicians have for some time been attempting to adjust. I refer to the practice of anesthesia, clinical pathology and radiology. In some instances hospitalization insurance contracts also include such services as physical therapy, electrocardiography, basal metabolism and the care of the ambulant accident patients. These services are medical services. The administrators of hospitalization insurance plans claim that they are providing nothing more than the services ordinarily furnished by hospitals on a basis long established by practice. Although it may be true that in many hospitals the charges for the services of the anesthetist, clinical pathologist and others may be included in the bill, such a practice is not necessarily correct.

There seems to be sufficient evidence to show that in some instances hospitals have been profiting through the exploitation of the specialists which are ordinarily housed in hospitals, chiefly anesthesia, clinical pathology and radiology. It has been the custom to pay a salary to the physicians who furnish the services and to charge a full fee for the services. The difference, if any, has been placed to the credit of some other department of the hospital that showed a deficit.

Moreover, I believe that this practice constitutes the corporate practice of medicine and that such methods of furnishing medical care will ultimately result in deterioration of the service. The House of Delegates of the American Medical Association adopted the policy that medical service should not be included in group hospitalization insurance contracts. Hospitalization insurance corporations combine to organize and initiate plans with the inclusion of medical services contrary

to the policy and actions of the House of Delegates of the American Medical Association. The question is one which concerns not only anesthetists, clinical pathologists, radiologists and physical therapists; it concerns every physician in private practice since, if the corporations now issuing contracts for hospital insurance, with the inclusion of a few medical services, become sufficiently strong and influential to corner a large section of the medical market, and if they are able to acquire a considerable reserve and feel impelled to liberalize the contract benefits or to distribute to their members a dividend in some form or another, is it not reasonable to suspect that they will include more medical services? Therefore, surgery, otology, ophthalmology, dermatology, urology and other specialties may very well consider whether they may not be the next to be included in group hospitalization insurance plans.

This situation in my opinion indicates a very definite entrance of hospitals into the field of medical practice, led largely by this new movement of group hospitalization insurance. It is necessary for the medical society in each community in which group hospitalization insurance is proposed to study carefully the method of organization and administration, and the contract provisions before giving any approval of the plan. All such plans should be examined to determine, if possible, the effect they will have on the quality of medical service and the future of medicine.

Dr. C. M. Fleming, Rushville: I believe I have a solution of the fact that the hospitals give so many anesthetics and there has never been anything done about it. The reason for that is that many surgeons have their own anesthetists and, if they would make any effort to stop nurses and hospitals giving anesthetics, they would have to discharge their own anesthetists. I wish you would take that under consideration.

Dr. D. D. Monroe, Alton: I come from a county just across the river from St. Louis. The group hospitalization plan is well established in the city of St. Louis, with a clientele of over 30,000 people. It has a tripartite board, consisting of laymen, hospitals and physicians. Many physicians on that board are teachers in the medical schools of St. Louis. In self-protection we of the city of Alton and Madison county invited the hospital group into our county. We face an acute economic problem. We either must form group hospitalization plans in our county or see great numbers of our people go into St. Louis. What would you do under similar circumstances?

Dr. Austin E. Hayden, Chicago: I don't like the sound of my own voice but I can't let the opportunity go by without saying something special. I admit most of the others feel the same way. I asked Dr. Pettit when he was reading his paper the date of that letter when Dr. Roreham expressed such great surprise at the fact that the La Salle County Medical Society was questioning in any way the propriety of group hospitalization invading their domain because, as Dr. Monroe has said, it is a real invasion. It is my candid opinion that Mr. Roreham would have been really surprised, almost astonished, if you hadn't written that

letter. His letter was dated April 6, 1938. I suppose he has known from Leland—a hundred times, maybe a dozen times he has read in the public press and comments in the *Journal of Medicine*—that the question you asked in every instance.

Now, I presume that it is the privilege—I think John Neal will bear me out in that if he is here—of every individual to buy insurance against anything, lightning, life, fire or anything under the sun, and he must pay the price, of course, for the protection that he seeks. Now, it is said of group hospitalization insurance or group hospital coverage, or whatever name you want to call it, that that's without cost but it is not. Dr. Leland will tell you, and I hope he will discuss this matter again, that his figures show, and the report from the Bureau of Medical Economics shows, that the costs to the patients for those hospital days are anywhere from 11 to 38 per cent, and that cost is inescapable. I don't say it isn't just. I say the hiddenness of it bears the same unpleasant relation to the individual that pays it that the hidden tax on gasoline does, or anything else. If he wants to pay that, that's his business, but the American Medical Association or anybody else should say it is not.

The question that has been raised about anesthetics, of course, is pertinent. It is more seriously pertinent, however, in regard to x-ray and pathological service, I think, throughout the country. It is true, as Dr. Leland has said, that the administration of these services by employes paid by the hospital is a thing that has grown up through the years. Nobody paid very much attention to it. The people that were participating in it, the radiologists and the pathologists, evidently were satisfied—not entirely satisfied, perhaps—but they were satisfied with the way things were going, feeling they would be loathe to give up this relationship. I am informed that the St. Louis county plan, of which Dr. Monroe spoke, is the only plan in the United States that does not include any such services and, consequently, in that respect, at least, is the most ethical of all plans. I have been so informed. At least, that is the most prominent one. You see that Dr. Monroe's very pertinent question brings to the front just exactly what Leland said. The fact of the matter is that, if these plans are successful, they may become stronger from their central organization, from their ability to speak as one unit, from the fact that they are busy in public relief as affects their counties, where Dr. Pettit as county secretary is busy in his office. They are making contacts with the public. They get columns of favorable publicity, whereas the medical society very frequently gets columns of the other kind, in the long run, and it isn't a very long run. How long has the St. Louis plan been in existence?

Dr. Monroe: Less than a year and half.

Dr. Hayden: Across the river in East St. Louis they are beginning to feel the effects of an organization over which they have no control and still is invading their field. Now, whether the St. Louis county coverage is all right at the present time, you don't know what is going to happen to that in the future. And all these considerations are tied right in with this survey that

Dr. Leland is making, because I firmly believe that the beginning of many of these things will be either stopped or will be so rated that the control will be in the hands of organized medicine where, despite the statements of Rorcham et al. to the contrary, it really belongs in the doctor's hands and under the patient's control through his own private practitioner.

THE NEW DEAL IN MEDICINE*

*In this controversy over socialized medicine,
it's high time that we looked at both sides*

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I was in Springfield, Missouri, attending, by invitation, a county medical society meeting, the county society being an integral unit of the American Medical Association. Springfield is a typical American small town of 60,000 population. Its doctors are good, average, efficient, hard-working internists, surgeons, obstetricians, nose, throat, ear and eye, and general practitioners; not research workers or reformers. I was in a group when one said:

"Where is all this agitation against the medical profession coming from? Not from our patients—mine at least. They are satisfied. They tell me so. During the last two depressions I have taken care of every patient who has applied to me—whether he had any money or not. Many times I have paid hospital bills. We hear about lack of adequate medical care. I don't believe there has been one person with an actual illness in *this* county for twenty years who hasn't had adequate medical care if he wanted it. I have all the patients one man can handle. I can't go out and drag people off the roads and treat 'em. Where is the agitation coming from?"

"I'll tell you where it is coming from," said another. "Did you ever know a journalist or a free lance magazine writer? Well, they frequently get hungry. And when they do, they have to write one of these slap-bang articles. It can't be calm and judicial. It has to expose something—point to a '*racket*.' That is where the criticism is coming from."

"And don't forget the neurotics," added a third. "They are always howling. This \$150,000,000 worth of hospitals the government is going to put up will be filled mostly with neurotics."

I give this conversation for what it is worth as a viewpoint. It may be wholly or only partially true. At any rate, the first speaker's remarks do not confirm the statement of Dr. Hilton S. Reed, of Atlantic City, New Jersey, that "the 100,000 'bag-toting' Doctors of Medicine in the United States . . . believe the distribution of medical care and the cost thereof should be *modernized*." (Italics mine. I take it "modernized" means "socialized" in general terms.)

And the statement of the second speaker does get some support from the fact that in the November magazines, current with my present writing, an article on "The Sinus Racket" appears in *The American Magazine*, one on "The Drug-Prescription Racket" appears in *The American Mercury*, and one on "The American Medical Association" in *Fortune*. And in *Harper's* September issue, Mrs. Avis D. Carlson writes (a much more sober article) on "The Doctors Face Revolt." Most of all this is plain propaganda.

Now, if anyone wants to understand the present situation in medicine, he will have to sit down quietly and hear both sides. It is not a simple problem. There are grave objections to all the plans for reform.

I suppose it is unnecessary to state the problem. It is too familiar. Briefly, let us say, that it concerns the fact, I think it is a fact, that the cost of medical care is too high for the average American family, and that adequate medical care is not universally available in the United States. The situation is more acute than it was twenty-five years ago, although there have always been kicks about the doctor's bill, because medical science has advanced so that treatment is intrinsically and necessarily far more expensive than it was then.

The x-ray came along and all kinds of blood tests and surgery, which entail expensive hospitalization, and all kinds of new treatments that cost money. The up-to-date doctor wants his patients to have the advantage of all this and he has been caught up in a situation, just as we all have been caught up in the gyrations of modern machine life. In fact, I venture that the average doctor spends more time than all the bureaus in Washington fighting to keep his patients' hospital and laboratory expenses down. Certainly nobody can say that the American doc-

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tor of today has not kept abreast of the advances in medical science and technique.

And let us remind you also that with all the difficulties the doctor of our time has not done so badly. During the two depressions the number of people ill has been lower than at any other time in the history of the United States or than in any European or Asiatic country—particularly countries where state medicine flourishes. Life expectancy has increased. Infantile diphtheria and diphtheria, the scourges of young life in the Nineteenth Century, have almost disappeared. In some large cities there has not been a case of diphtheria for several years. The death rate from diphtheria here is a quarter of that of England or Germany. If tuberculosis continues on its downward course, we may expect that by 1960 “the great white plague” will be almost as harmless as smallpox.

This has been accomplished by the medical profession and its public health services operating under the very conditions that have brought so much criticism.

What is it, then, that the disaffected groups want in order to overcome the difficulties as to adequate medical care and its costs? Several plans have been advanced.

WITHIN REACH OF ALL

Under the National Health Program, some \$150,000,000 is to be used to build hospitals, in the belief that there should be a hospital within 30 miles of every citizen.

An American Medical Association survey shows that 98 per cent. of the population is already within that distance of hospital care. So if the plan is carried out, some hospitals will be in territories where there are hardly a hundred people within a hundred miles.

Before this vast sum is spent, some agreement about what is actually needed should obviously be reached.

The first is the “socialization of medicine.” As long as private enterprise remains, and as long as some people at least have enough money, they are going to have their own doctor.

We do not have to go very far afield for confirmation of this. Mr. James Roosevelt, I take it, is representative of all forward-looking social thought. Recently, as has been pointed out, he was faced with the necessity of choosing a doctor. Did he feel, as do his father and the sponsors

of the National Health Program, that his peptic ulcer was a public problem? Or did he apply to the Washington Group Health Association, Inc., so enthusiastically endorsed by his mother? Or did he go to a government hospital? Oh, no! He went halfway across the continent to the private doctors who have the best—and deserved—reputation for handling his particular kind of case.

Several other plans which demand serious consideration have been advanced. One is group hospitalization, advocated with some reservations—as to the maintenance of professional standards—by the American Medical Association; one is group medical service; another is compulsory health insurance; one is the National Health Program; one is voluntary health insurance as advocated—through a meeting of the House of Delegates, September 16, 1938—by the American Medical Association.

Most of these plans bear their explanations in their names. I will refer to certain aspects below, but here I want to pause and point out that the critics, I will even say the enemies, of the medical profession in its present setup, are two; one set is without and one set is within its membership.

The enemies without are the sociologists. The social workers, the statisticians, the public health officials (lay and professional, of course, with many individual exceptions), the visiting nurses, the uplifters, the well-intentioned hell-pavers, from William Trufont Foster or M. M. Davis down to any soapbox orator in Columbus Circle—people who have never had the responsibility of treating a sick person and who think diagnosis and treatment can be dished out wholesale, after the fashion of the ready-made pants business.

One example of this particular kind of crusade is the very current “campaign” against syphilis, as preached by Surgeon General Parran. Here is a problem, hitherto essentially of private practice, which they propose to take over as a public health campaign because they believe private physicians do not give it adequate attention. I don’t know whether General Parran has ever had the responsibility of treating a private and personal patient with syphilis—one who voluntarily chose him as his physician and put his life and honor in the doctor’s hands. Perhaps he

has. All I can say is he doesn't act as if he had ever had that experience.

As part of this campaign it is advocated that everybody in the United States have a Wassermann test, presumably to see how many people have syphilis. But any practicing doctor could tell you what kind of mass hysteria this would raise. The Wassermann test is not an infallible sign of syphilis. Every doctor knows hundreds of spiritual tragedies where a perfectly aseptic person has had his or her mental outlook blackened, and taken unnecessary treatment for years because of a chance positive Wassermann test. And, on the other hand, some very definite cases of syphilis carry a negative Wassermann. The experienced physician uses the Wassermann as a check to his clinical findings—if he suspects syphilis already, a positive Wassermann confirms his diagnosis. If in a routine complete examination he gets a report of a positive Wassermann where no signs of syphilis exist, he ignores it. At any rate, he usually keeps the knowledge to himself. And yet I saw a photograph reproduced in the rotogravure of a metropolitan newspaper of a Wassermann party, among the members of a suburban women's club. All the ladies were having their Wassermans taken. What a blow-up—domestic and cultural—would happen if one of them were to come out positive!

Then the idea that every infected individual should be intensively treated for syphilis, and that this will wipe out the plague! The opinions of practicing physicians in this field are quite at variance with such an optimistic idea. There are several doubts: one is whether syphilis, even with our modern methods, is ever cured. Another is whether the treatment is not often worse than the disease. I heard a very eminent syphilographer say not long ago, "If I had syphilis, I'd conceal it." Meaning that intensive treatment in the early stages may tend to the development of late serious nervous syndromes and disease in other organs.

Not that treatment in syphilis is ineffective or that it should not be exhibited. But it should be applied with great care and skill, individualizing each case. The wholesale slathering of anti-syphilitic treatment that the public health enthusiasts desire would be disastrous.

For the statistician all these human beings with syphilis are numerals on a piece of paper. In his magnificent calculations a stroke of the

pencil—wholesale treatment—wipes the syphilis out. But human experience is not so simple as that.

Of the enemies within the profession, the first thought will probably go to the so-called rebel Committee of Physicians who belong to the organized medical association but who disagree with its policies. The committee is not much of a menace, because it is composed mostly of dilettantes. The members have worked in institutions or on the faculties of medical schools. They have not experienced the rough and tumble of actual practice. What they want is an extension of government into practice—larger utilization of government hospitals, the extension of public health officers into private practice, health insurance, group hospitalization, etc.

What other groups advocate is Compulsory Health Insurance for everyone—which means that as an employer you pay a third of the insurance, the employee pays a third, and the government (that is, the taxpayer) pays a third. It is like the Social Security business.

The group hospitalization plan is very widely popular. Under its provisions you are solicited to join a group and pay so much a month. When you fall ill you may go to any hospital which is a member of the group. Your routine expenses are met or discounted in consideration for the fact that you have paid your dues regularly. You pick and individually pay your own doctor.

Group medical service is somewhat like the group hospitalization plan, but includes the services of physicians. You pay so much a month to a group of doctors and when you are ill they take care of you without additional cost. For many people (for instance, Mrs. Avis D. Carlson in *Harper's* magazine for September) it is "almost incomprehensible" why the American Medical Association does not approve of this idea. But the Association has two reasons. One is that the plan eliminates free choice of a physician. The second is that in practice in communities where this plan is flourishing the tendency is for groups to meet competition by reducing the monthly rate, so that in some instances members of the group are required to pay only 25 cents a week. Under these conditions, the medical care furnished is naturally inefficient and even dangerous.

These objections do not appear to me to be

insuperable. I incline to believe that the group service plan combined with group hospitalization is likely to come nearer than anything else to solving the problem of medical care for the economically underprivileged. As to the free choice of doctors, my observation is that such groups as I have seen in action furnish very good medical care, and the clients like their doctors—would choose them if the choice were left to them. As to the cut-rate competition, that could be controlled by legislative action or pressure from within the profession.

The most serious menace within the profession is the doctor who charges fees that are too high. There are a great many such men and they are doing the profession immense harm. They are representatives of the tendency to over-capitalization.

The profession blinks at this problem and is inclined to deny its existence. I know better. I have a mailbag every day which tells me of treatment all over the country that I can only regard as outrageous. It is not only the poor who complain. All you have to do is to keep your ears open to hear the comparatively rich vent their ire about hospital and medical costs.

Such men and practices are admittedly in the minority. But they are met with too frequently at that. I believe it is actually true, although popular belief tends otherwise, that the best known, busiest, and most competent practitioners are the most reasonable in their charges.

The real problem of medical practice today is to bring "A" and "B" together. I visualize "A" as a young wage earner who has left home and gone to a new community to work. He falls ill, is willing to pay a fair price for medical services, but doesn't know where to go. I visualize "B" as a competent young doctor in the next street who is only too willing to treat "A" at a fair price. Under present circumstances all too often they fail to get together. Instead "A" gets gypped.

I believe the medical profession, whether badgered by federal bureaucracies or not, will solve that problem.

The American Medical Association, says *Fortune*, "has worked against its own purposes by clinging to ideas that rightly or wrongly have been discredited and it finds itself within hailing distance of its own downfall."

So? I would like to bet that when the receivers meet to take over the assets of the successors of *Harper's*, *Life*, *Fortune* and their subsidiaries, at some moment in the dim future, the American Medical Association will still be thriving with unabated vigor.

VALUE OF SUPPOSITORY MEDICATION IN ANORECTAL CONDITIONS

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Notwithstanding advances made in the surgical treatment of anorectal conditions and the attention given to preoperative preparation and to postoperative care, postoperative distress remains a problem in many cases and tenesmus is a frequently occurring symptom. Pain due to tenesmus is a common factor in most cases in which borderline surgery is performed, as well as in rectal conditions treated by office procedures. Frequently it is desirable, or necessary, for the patient to remain ambulatory and at work; pain and tenesmus naturally lessens his ability to carry out his customary duties comfortably and efficiently. It is, therefore, essential to provide a remedy for this distressing postoperative complication.

Analgesics and sedatives are often inadequate in their action to insure rest and comfort for the patient. Narcotics, such as the opiates, may interfere with the desirable rate of recovery and, in the case of the ambulatory patient, their administration may involve loss of time from work while under the influence of the drug. Fansler in a review of proctology, discusses the use of various anesthetic injections to prevent postoperative pain and points out that while such measures are of value in selected cases, their indiscriminate use is not to be recommended. He quotes, among others, Kilbourne and Simmons as adhering to this viewpoint. Kilbourne calls attention to the fact that, in the case of isoamyl-hydrocupreine, oily solutions applied to traumatized tissues in experimental animals does not appear to readily surrender the drug to the tissues. Graham uses the desiccation method in the treatment of hemorrhoids. A suppository is inserted and an antipyretic in combination with codeine is employed postoperatively.

It has been our experience that a suppository made with a non-greasy, self-emulsifying base,

and containing a new atropine-like drug is of value in the control of postoperative pain and tenesmus. This suppository is available to the profession under the trade name of airoil suppositories. Each suppository contains syntropan, $\frac{1}{4}$ grain; larocaine hydrochloride, $\frac{1}{2}$ grain; thigenol, $2\frac{1}{2}$ grains; and bismuth oxyiodide-subgallate comp., 5 grains. These constituents are presented in a newly-developed hydrophilic base.

Clinical experience has demonstrated that syntropan possesses the advantage of exerting the beneficial antispasmodic action of atropine and of being non-narcotic. Chemically, syntropan is the tropic acid ester of an aliphatic amino alcohol, dimethyl-diethylamino-propanol. Whatever crudities may have been inherent in the traditional use of belladonna, respectively its alkaloid, atropine, and of conine in rectal suppositories, the employment of these drugs was not a matter of unsound or fanciful therapy. In the expectation of obtaining similar effects from syntropan when applied to traumatized or inflamed rectal tissue, we were led to give this substance clinical trial in a number of cases. Its availability in a new hydrophilic suppository base, combined with the topical anesthetic, larocaine hydrochloride, the antiphlogistic, thigenol, and bismuth oxyiodide-subgallate comp., especially facilitated by study. The results obtained are illustrated by the case histories which form part of this report.

Case 1. R. W., female, 26, married. Complained of pain and swelling with intermittent discharge of pus. These symptoms had returned in spite of a previous operation, one year ago. Examination revealed a perianal fistula three centimeters long, the internal opening being just inside the sphincter. Radical incision of the fistula was performed with partial excision of the external sphincter. Packing was removed on the third day. Postoperatively, oil enemas and an airoil suppository twice daily, sufficed to relieve pain and tenesmus. Healing was complete at the end of $3\frac{1}{2}$ weeks during which time the patient had been free from pain and discomfort.

Case 2. S. S., female, married. For the past $2\frac{1}{2}$ years this patient complained of pain and swelling around the rectum, and more recently noticed a throbbing tumor which opened suddenly discharging foul smelling pus. Despite various treatments, including injection, pain and tenesmus were often unbearable. Rectal examination revealed two perianal fistulous openings which on further inspection were found to connect with each other and with another opening immediately internal to the external sphincter. On July 27, 1937, radical excision of the fistula was performed. The fistula was found to have a very tortuous course necessitating incision (excision) of the sphincter. Because of the extensive sacrifice of tissue the distal part

of the wound was closed with two sutures. The rest of the wound was packed. Packing was removed after three days and the wound allowed to heal by granulation. Postoperatively, two airoil suppositories per 24 hours usually sufficed to dispel tenesmus and muscle spasm; occasionally more than two were used in twenty-four hours. Healing was complete and the patient was discharged on September 1, 1937.

Case 3. F. T., female, 40, married. The chief complaint here was discharge from a tract in the anal region. There was also intermittent swelling with increased discharge of foul smelling pus. Examination revealed two fistulous openings posterior to the anus connecting with a fistula extending to the mucocutaneous line and opening just above it. Radical excision, including division of the external sphincter, was performed. The outer portion of the wound was closed with one suture, the remainder of the wound was packed. The pack was removed on the third day. Postoperative treatment included oil enemas and airoil suppositories, two or three times a day, for three weeks. The patient was discharged after four weeks during which time there had been a minimum of pain and discomfort.

Case 4. W. K., female, married. Here the chief symptom was severe pain in the rectum, intermittent swelling, and the discharge of varying amounts of pus. Examination revealed a complete fistula about six centimeters long extending along the lateral surface of the rectum several centimeters beyond the rectal sphincter. The tract was completely excised, the operation involving complete severance of the external sphincter. The outer angle of the wound was closed with one suture. Warm witch hazel packs were used three days postoperatively. The wound was allowed to heal by granulation under daily inspection. One airoil suppository was used three times per 24 hours for the first week; thereafter, one suppository daily sufficed. A low residue diet, mineral oil by mouth, and rectal injections of oil were included in the postoperative regimen. Healing was complete in five weeks.

In the three cases that follow, a period of palliative treatment preceded surgical measures:

Case 5. E. G. Chief complaints were constipation, painful swelling around the anus, and rectal bleeding. Examination revealed no other pathological changes than three combined internal and external bleeding hemorrhoids. Low residue diet and mineral oil by mouth were prescribed. Oil enemas were employed when necessary and airoil suppositories were used twice daily. On this regimen, the symptoms disappeared but there was no marked reduction in the size of the hemorrhoids. Hemorrhoidectomy was therefore performed. Warm packs were used postoperatively, and beginning on the third day, oil enemas were given daily for two weeks. After the patient left the hospital, two airoil suppositories were inserted daily for one week, and thereafter one suppository per day proved sufficient until the end of the convalescent period. Complete healing and other good post-operative results followed.

Case 6. I. J., 49, female, married. The chief complaint was rectal bleeding and protrusion of tissue on

straining at stool which had recently become worse. Patient had been constipated for four or five years during which time symptoms were noticed intermittently. For one week before operation mineral oil was given orally. Airol suppositories and oil enemas were also used. A radical hemorrhoidectomy was performed and two large combined internal and external hemorrhoids and one small one were removed. There was a good postoperative result. When seen six months after operation, the patient reported that occasionally she had had some tenesmus which was relieved by the use of airol suppositories for two or three days.

Case 7. E. M., female, married. This patient complained of intermittent protrusion of the tissues of the rectum accompanied by intense pain and bleeding. Often the mass could be reduced only with great difficulty. Examination revealed two combined internal and external hemorrhoids and one external hemorrhoid. A preoperative regimen of low residue diet, mineral oil orally and by rectum, and one airol suppository a day, was observed for two weeks. Radical hemorrhoidectomy was then performed. Mineral oil and airol suppositories were used for three weeks after leaving the hospital. Very little postoperative discomfort was experienced, and complete healing took place. The patient has been symptom free since leaving the hospital.

Case 8. W. W., male. Complained of a protruding mass following every bowel movement. More recently this had been accompanied by bleeding, extreme pain and difficulty in reducing the mass. Examination revealed three large combined internal and external hemorrhoids which were fragile and bled easily. Proctoscopic examination was otherwise negative. Radical hemorrhoidectomy was performed in July, 1936. As postoperative treatment, warm witch hazel packs were applied for 48 to 72 hours. Mineral oil was given by mouth and at the end of 72 hours a mineral oil enema was given. Following the evacuation, airol suppositories were inserted in the lower part of the rectum two or three times a day for one week. During the second week, one airol suppository daily sufficed to keep the patient free from pain. When examined in December, 1936, complete healing and good postoperative results were apparent.

Case 9. A. G. Male, 38. Complained of profuse bleeding from the rectum in connection with bowel movements. Examination revealed two large combined internal and external hemorrhoids, tender but not bleeding. Proctoscopic examination was negative. Radical hemorrhoidectomy was performed, and postoperative treatment was carried out as outlined in the previously detailed cases. Airol suppositories were used for three weeks after operation, the patient reporting himself free from pain during that time and thereafter.

Case 10. C. M., male, 25. Complained of swelling, and protrusion from the rectum with bowel movements, always worse when the patient had been on his feet a great deal. Examination showed two large internal and external hemorrhoids and also one small internal hemorrhoid on the anterior rectal wall. Proctoscopic examination was negative; some bleeding was noted

after the examination. A radical hemorrhoidectomy was performed, and the postoperative treatment already described was carried out. Patient left the hospital on the sixth day after operation and treatment was continued with airol suppositories for about two weeks. When the patient was seen about six months later, a skin tag was excised. In all other respects a good postoperative result was apparent.

The following two cases are cited as being illustrative of the adjuvant use of airol suppositories in the treatment of moderately extensive rectal fissure.

Case 11. R. O., female, married, 39. Complained of itching and burning around the anus and the appearance of blood on toilet tissue after cleansing the parts following defecation. These symptoms were first noticed one year ago, and there had been no relief from various types of local treatment. Examination revealed four or five deep, painful rectal fissures. Spasm was readily induced by any manipulation of the rectal tissues. The fissures were cauterized with silver nitrate and a bland ointment was prescribed. Mineral oil was given orally. Airol suppositories were used twice daily, and later once daily. Six office treatments and the routine described resulted in a complete cure.

Case 12. E. T. J., female, 36, married. Complained of difficulty in connection with bowel movements. The movements were followed by pain, burning, tenesmus, and, at times, bleeding. Examination revealed five large rectal fissures extending to the mucocutaneous margin and a small ulcer at the post-anterior margin of the anus at the end of one of the fissures. Examination readily brought about tenesmus and bleeding. On March 3, 1937, the fissure was cauterized with the electric cautery, patient advised as to hygienic measures, a bland ointment was prescribed, and two or three airol suppositories daily were used to allay the tenesmus. This regimen was followed until June, 1937, by which time complete healing had taken place. When seen several months later, the patient stated that she had had no further trouble.

Case 13. H. B. H., male. First seen in 1934 complaining of protrusion from the rectum with some bleeding following constipated bowel movements. Examination showed two large combined internal and external hemorrhoids which bled readily. Patient refused surgical measures. He was placed on a low residue diet, plus mineral oil by mouth and by rectum. As two airol suppositories in 24 hours were found insufficient to dispel pain and tenesmus, the dose was increased to three in 24 hours. A few weeks later this was reduced to one suppository a day which was found to control the discomfort. Bleeding, however, persisted.

Case 14. W. W., male, 46. Complained of constipation and of itching and burning around the anus, also of occasional protrusions from the rectum. Examination revealed three large, painful, external hemorrhoids. There was also a small fissure. The fissure was cauterized with silver nitrate and a bland ointment was prescribed. Two airol suppositories daily were used

for two months, and thereafter one daily for another month. Examination after three weeks showed the fissure to be healed. Swelling had disappeared, there was no external evidence of hemorrhoids, and the patient was free from symptoms.

Case 15. W. M., female, married, 51. Complained of itching and burning, and presence of blood around the anus. Examination revealed two small fissures and two small combined internal and external hemorrhoids. The fissures were cauterized and the usual hygienic measures and prophylactic treatment prescribed. Airol suppositories were used twice daily for two weeks and thereafter once daily. When the patient was examined after this regimen the fissures were healed and there was no evidence of hemorrhoids or of protrusion of tissue.

COMMENT

The character and duration of the relief obtained in our cases convinces us that the local effect of syntropan on the traumatized or inflamed rectal tissue is the outstanding feature of airol suppositories. This we have deduced from the cases cited herewith and from many others not reported. Anorectal disorders are very frequently characterized by tenesmus, and syntropan greatly relieves this symptom. The larocaine content is of value for its anesthetic action, and the special base, forming as it does a creamy mass and spreading out as an ointment inside the rectum, favors a longer lasting therapeutic effect from the medicaments. We have found airol suppositories of value as a palliative treatment as well as an aid to healing in postoperative cases.

SUMMARY

Airol suppositories, containing the antispasmodic syntropan together with larocaine, thigenol, bismuth oxyiodide-subgallate comp., in a special hydrophilic base, have been used in a number of cases of anorectal conditions, particularly postoperatively.

Fifteen typical case reports are given.

A satisfactory clinical response attended the use of the suppositories both when employed postoperatively to favor healing and as a palliative treatment.

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POSTGRADUATE MEDICAL EDUCATION FOR ILLINOIS

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Reference in these remarks today to postgraduate instruction applies to that for groups or for extension work. Those of us who want to learn more about some one particular subject by taking individual postgraduate work will do so if we can finance it, if we can leave our work for the required time and if we feel that the expenditure of time and money as well as the loss of business while we are away justifies these items. Most of us, however, after we start up find it awfully hard to get away. Therefore, any organized system of instruction would be of benefit to us as individuals and to the profession as a whole.

This is not the place to discuss the social side of medicine or the purported predicament in which medicine as an organized group finds itself at the present time. An entirely personal opinion of mine is that we will get farther by practicing more and better medicine than by vociferously proclaiming our rights. After all our rights are only those granted us by the Declaration of Independence as to Life, Liberty and the Pursuit of Happiness; by the Constitution in its preamble "to secure the blessing of Liberty to ourselves and our Posterity" and in the Ninth Amendment in the Bill of Rights "The enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people." If we refuse to recognize that things in the world of today are dynamic, not static, and that our rights are changing thereby in medicine or in anything else then that is our hard luck.

These remarks today are probably the outgrowth of a letter sent to Dr. Munson, January 24, of this year. I expressed at that time a desire for better organization of postgraduate medical education for myself and others living outside the Chicago area and not immediately adjacent to the medical center of St. Louis. I felt that Dr.

Paper read at meeting of Central District Medical Society of Illinois, Decatur, Illinois, November 15, 1938.

Muuson's position as Governor for down state in the American College of Physicians and as the then President-Elect and now President of the Illinois State Medical Society might present an opportunity for correlation of the activities of these two organizations. One of the stated objectives of the College of Physicians is postgraduate medical education not only at the time of the annual meeting but throughout the year. The State Medical Society has very definitely expressed itself as favoring postgraduate instruction of its members. Its Scientific Service Committee is organized to help county societies and their secretaries secure speakers for meetings.

It has been my feeling, however, that the work of the Scientific Service Committee is not as well organized as it should be. That is not entirely the fault of the Committee because it and its former chairman, our President-Elect, Dr. Hutton, have worked hard. I have attended various county meetings where the speakers have been secured through that committee and have heard some excellent and informative talks on various phases of medicine, surgery and the specialties. However, as I have sat at these meetings and as I have read the Illinois Medical Journal telling of men giving programs I have been struck at times by what appeared to me to be insufficient correlation. I have found by inquiry that one of the reasons for this is that a County Secretary unable to secure a program from his own group writes in and says "I need two speakers for next month. Can you help me out?" Perhaps a subject is requested. Perhaps speakers from the list furnished by the Committee are desired. Perhaps these men, authorities in their chosen fields, are already booked up for as much as they feel they can do in travelling about the state. Almost all of them are from Chicago and are connected with one of the four medical schools there. They may find it impossible to go, so they delegate someone else to serve in their places. I know of one instance where failing to get the men wanted from Chicago a County Secretary wrote in to one of the schools in St. Louis for a program. Then later a program from Chicago was offered. Many explanations and rearrangements consequently had to be made.

When I was in medical school I roomed with Dr. Leroy E. Parkins for two years. He is one of the most systematic men I ever knew. We have kept in touch with each other through the

years. I have watched his work in medical education with great interest for personal reasons. He was Assistant Dean for Graduates in Harvard Medical School and is now Secretary of the Executive Committee on Postgraduate Instruction of the Massachusetts Medical Society, as well as being one of the good internists of Boston. Some of you may recall his article in the Journal of the American Medical Association a couple of years ago on postgraduate medical education through the medical society. Postgraduate medical instruction in Massachusetts through the Massachusetts Medical Society is a going concern.

Several other states have worked out excellent programs. Our guest speaker has planned for the State of Michigan a program that from what I have read sounds very practical. Only last month at the Central Neuropsychiatric Association in Minneapolis one of my Michigan friends said to me, "Dr. Bruce's work in our state is doing something definite in the right direction instead of the old system of letting some surgeon tell doctors how good an operator he is and inviting them to send patients to him." The active impetus to this work comes from the State Medical Society with Dr. Bruce as chairman of the committee.

We are fortunate in Illinois in having four good medical schools in Chicago. Able men are on their faculties. Research work and clinical investigation of a high order of merit is being carried on. Those who live in the southern half of the state also have many contacts with the men in the two good medical schools in St. Louis. While these schools are not in Illinois many of their graduates are located in the state, so they have the association as alumni as well as that of proximity. Men from the faculties of the medical schools of the University of Wisconsin, Indiana, Missouri and Iowa have given generously of their time to help meetings in our state. There are men not connected with any school but practicing good medicine all over Illinois. I think that all of you will agree that the papers, discussions and demonstrations at this meeting today show ability to teach the art and science of medicine. I believe that all of these assets should be capitalized and organized to be made available to all of us who want to learn.

It is the experience of officers of medical societies as well as others that the statement "A prophet is not without honor save in his own

country," still holds good. Nevertheless there must be opportunity for the society members to present papers before their local groups, even though the attendance may not be great. It is the only way to get started. Most of us need the spur of having to get a paper ready for presentation by such and such a date. We also need to work up the material for our own knowledge, and for our own self-esteem to have the approbation of our local confreres. Once these demands are met the doctor is ready to spread his talents over a larger territory, district, state and national as well as special meetings. The plan I have in mind will include those who have ability in this line in the program of postgraduate instruction.

The attendance at well-planned, well-conducted meetings shows the interest of doctors in things medical. I know of no other group whose members will so frequently give up their own time to go and learn something that will be of help to them in helping their patients. Actors and aviators are said to talk shop whenever they are together but they can't equal a group of doctors in this respect. The social relationships in a gathering like this are likewise among the pleasant parts of a doctor's life. The success of the caravan, if one may call it that, which went out over the state to talk about obstetrics and pediatrics was shown in the interest at the largely attended meetings put on by that group. Those speakers talked on related subjects. On the other hand the interest of doctors in medicine in general is demonstrated by the attendance at the recent meeting in Galesburg where such widely varying subjects as anemia, hyperthyroidism and injuries of the face were presented before a good audience. The attendance here today is good. Doctors will attend meetings if they feel they will come away with some new item of knowledge. Even though they may get the same thing from the literature they like to see as well as hear a speaker so they may glean something from his personality as well as his knowledge.

Our State Society is divided into eleven councilor districts. Cook County makes up one district, the other ten are down state. There are sixteen councilors, three from the third or Cook County District, one from each of the other districts and three councilors at large. Two of these are at present from Cook County. The division of interests and struggle for power between Chi-

cago and down state is regrettable but is present and probably will continue. It is not peculiar to Illinois in medicine or anything else. One knows of it in England where the doctors of London speak of those outside as "provincial practitioners," and feel that they are pretty much country practitioners. It is present in New York, Pennsylvania, Massachusetts and Maryland and other states where medical centers are pretty much in metropolitan areas. Dr. Parkins tells me it is less prevalent in Massachusetts than when we were in school. He thinks the Massachusetts Medical Society has done a great deal to eliminate through district meetings some of this feeling. I do not know so much about Michigan but am sure that Dr. Bruce can be counted on there. After all we are all doctors working to make a living taking care of the sick. The wise professional leaders of Chicago recognize that good medicine is not limited alone to their vicinity. They would be willing I know to help us, for what helps one helps all.

I believe that if the Scientific Service Committee had two or three subcommittees with the present group serving as an executive body and clearing house its work could be extended. I think that one of these subcommittees should contain representatives from each of the four Class A medical schools in Chicago. Another should consist of a representative from each of the councilor districts except the third or Cook County one. My reason for excepting this is that the profession in Cook County is well organized through the Chicago Medical Society and its branches. The Official Bulletin of the Society lists all courses and meetings each week. It would be, I believe, rather presumptuous for the State Society as a whole to attempt to organize extension work of this type in Cook County. The plan of councilor district organization for postgraduate instruction could be adapted taking local conditions into consideration there.

The district councilors know the men in their territory. I would say that the councilors themselves could be the representatives on the subcommittee of their districts save that their time is already pretty much taken up in handling the business of the State Society in the council meetings and in looking out for the activities of the component societies in their district. It might be left optional with the councilors as to whether

they wish to serve or to appoint someone. I believe some subgroup should have contact with the State Department of Public Health, the State Department of Public Welfare and the United States Public Health Service. Facilities are probably going to be available for instruction on pneumonia and other infections as they now are for venereal disease. Either the Scientific Service Committee itself or a subgroup should be in touch with the medical schools in St. Louis as well as in adjacent states as members of their faculties and others are generous about coming over to Illinois to help out.

I would not want you to think for one minute that I would take away from the county society officers the initiative or the responsibility for planning their meetings. Local conditions make a great difference. Many County Secretaries would be glad to work with the district representative as well as the Scientific Service Committee in this respect, both for meetings and for extension work.

The duties of the representative of the district on the subcommittee would be to act as chairman for his district. He would sound out the counties as to their needs and desires and inform them of the possibilities for speakers for meetings, or instructors and arrangements for a series of meetings. These latter could be worked into a postgraduate extension course either on related subjects or covering a broader field. One such series of weekly meetings in a rural Massachusetts district over a period of ten weeks included the following subjects: Bright's Disease and Hypertension, Heart Disease. Control and Treatment of Respiratory Infections. Whooping Cough. Obstetrical Examination. Toxemias of Pregnancy, Modern Treatment of Gonorrhea and Modern Treatment of Syphilis. Now all of these subjects interest us all whether we do general practice or specialize. I learned a lot from the programs on obstetrics in our county though I do not work in that line. Perhaps that's why I found so much new to me.

I realize that there are many practical points in our big state such as the large number of county societies, the time and space factor, the item of expense that would have to be worked out. Also there will probably be objections on the part of some about centralization of speakers or personal feelings or a thought that such a

program is a confession of inadequacy. Nevertheless I feel that certain definite results could be accomplished. Some of these are: improved medical service for our patients, our first responsibility; stimulation through the forces of organized medicine which would knit the profession still more firmly together; development of potential teaching ability at present unused; increased value of the districts to the State Society; and increased acquaintance between Chicago or St. Louis and down state within the district. Such a program would by no means preclude such meetings as this one today; this meeting is really an example of what I would like to see all over the State of Illinois as a part of systematized academic postgraduate instruction in medicine.

TREATMENT OF WEAK FEET

(Pes Valgus)

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Views regarding the management of individuals with weak feet have been modified so considerably during the past five years that a summary of the present classification and method of attack needs presentation.

The familiar interpretation of the foot as a "static tripod" has been overshadowed by a more dynamic conception that portrays the foot as an active organ of locomotion, serving spring and propelling functions, and as an adjustable pedestal that is reshaping itself continuously in adaptation to the constantly shifting center of gravity of a mobile superstructure.

The author¹ has emphasized the close relationship between superstructure posture and pedal efficiency. Steindler's² work, culminating in his treatise on the mechanics of normal and pathological locomotion, has centered attention on the active, the dynamic, phases of weight bearing; and such data on the kinetics of gait have found direct clinical application when recorded by the electrobasographic method of Schwartz.^{3,4} Two very important contributions to this literature have been made recently by Wiles⁵: the action of the peroneus longus in its relationship to the mobile function of the first metatarsal segment and the unit action of the underfoot against the astragalus. Lake⁶ has called attention to the very important "splaying"

forces acting on the forefoot during the take off phase of gait. Morton's⁷ very profound researches on the evolution and physiology of the foot have thrown an entirely new light on the important role played by rather common anatomical variations of the metatarsal bones in the causation of abnormal weight bearing.

The majority of cases of weak feet fall into one of the following three groups:

1. Postural group.
2. Shortened Achilles group.
3. Anatomical group.

It must be borne in mind that elements characteristic of more than one group may be present in any given instance of weak feet.

PATHOGENESIS, POSTURAL GROUP

In considering the pathogenesis of the postural group, the beginning, or the earliest postural

down and forward, and lumbar curvature is accentuated. The center of gravity is shifted forward and superstructure load is distributed forward on the sacrum. As a result, the sacrum rotates on its axis and the pelvis moves with it, so that pelvic tilt is increased. As the line of gravity moves forward, it falls in a plane through the anterior borders of the acetabuli. The supporting femoral columns, in becoming readjusted to the anteriorly shifted line of gravity, must move to positions anterior to the acetabuli; and this they do by internal rotation.

The rotation thus produced in the hip is reflected in the ankle for the reason that there is no independent rotary motion in either the knee joint or the tibio-astragalar joint when the body is erect; that is, when the knee is extended and when the foot is perpendicular to the leg. The

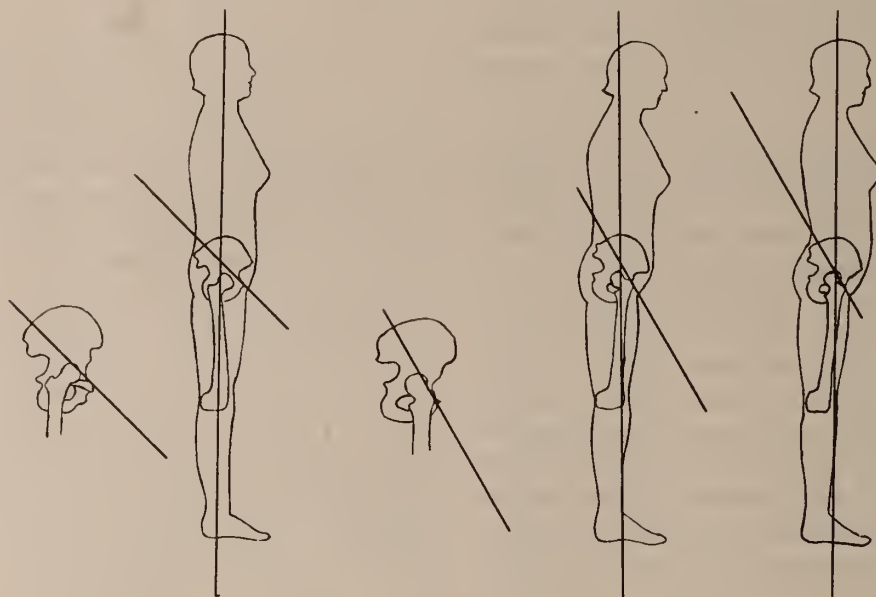


Figure 1

Pelvic tilt in the normal, fatigue and hyperextended types of posture. In the normal posture the femurs are rotated externally and they are centered in the line of

gravity posterior to the acetabuli. In the fatigue and hyperextended postures the femurs are rotated internally and they are centered in the line of gravity anterior to the acetabuli.

abnormality in relationship to the foot, has been demonstrated to be a "relative" valgus position,¹ a position into which the foot is forced by improper reception of body weight on its dome. Primarily, there is poor superstructure posturing with a forward shift of the line of gravity of the body (Figure 1). In the common lordotic, or fatigue, type of postural defect, the head and shoulders are drooped down and forward, thoracic kyphosis is increased, the abdominal muscles are relaxed, allowing the abdominal organs to fall

femur, the tibia with its attached fibula, and the astragalus move as a unit. When the femur rotates in the acetabulum, the astragalus rotates in the subastragalar joint.

Since the forefoot is bound firmly to the calcaneus by strong plantar ligaments and fascial bands and since there is very little motion in the joints of the forefoot (excepting the first metatarsal segment), the femoral-tibial-astragalar column, by rotating on the calcaneus, executes rotary motion against the entire underfoot

(Figure 2). Conversely, the underfoot rotates as one piece beneath the femoral-tibia-astragalar column. These rotary movements occur in the subastragalar joint.

Internal rotation of the femoral-tibia-astragalar column, a direct consequence of lordotic, or

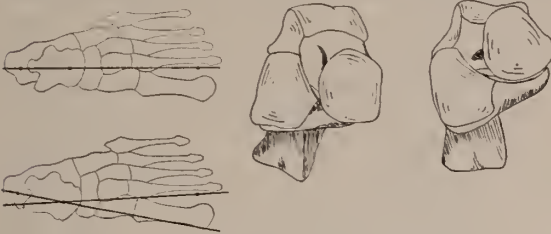


Figure 2

When the astragalus is in its natural position of external rotation, its center of gravity is coplanar with the anterior and posterior supports of the longitudinal arch. When the astragalus rotates internally, it moves out of the plane of these supports.

Figure 3

Comparison of the normal calcaneoastragalar relationship with that existing when the astragalus is rotated inward and downward and when the anterior end of the calcaneus is rotated outward and upward.

fatigue posture, produces a "relative" valgus relationship between the supporting column and the foot, and this holds true just as much when the foot points straight forward as it does when the foot points outward. The reason for this is that valgity is a posture of the subastragalar joint, between the astragalus and the underfoot, and is present just as much when the astragalus turns in against the underfoot as it is when the underfoot turns out against the astragalus. Actual valgus occurs when the foot turns out beneath the astragalus.

When the astragalus rotates internally against the calcaneus, its eccentricity on the supporting shelf of the calcaneus, the sustentaculum tali, is increased. Superstructure weight is moved farther medialward on the sustentaculum and the line of gravity in the femoral-tibia-astragalar column is moved away from the natural center of motion of the column in the subastragalar joint. The effect on the calcaneus of this eccentric loading is eversion (tilting) and abduction (Figure 3). The outer border of the calcaneus is elevated and the anterior end of the bone swings outward.

Because of the firm connection between the calcaneus and the forefoot, the forefoot follows the calcaneal lead into eversion and abduction and thus the entire foot is brought into an ab-

ducted, or valgus, position. The pronatory force, developing and maintaining valgus foot posture, is the internal rotatory moment* of the supporting column in its relationship to the underfoot. This moment is increased as the astragalar head moves medialward in the subastragalar joint.

As the calcaneus becomes tilted, the shelf for the astragalus, on the medial side, is lowered and, consequently, the astragalus becomes more and more depressed. Thus there is registered clinically a depression of the inner side of the foot, or of the longitudinal arch.

In the presence of a pronated foot, a foot that carries its greatest load eccentrically on its inner side, locomotion is possible only after certain compensatory changes have taken place between the forefoot and the backfoot (calcaneus-astragalus). These changes comprise dorsiflexion of the forefoot, hypermobility of the first metatarsal segment and splaying of the forefoot. In addition there is developed a hypermobility in the midtarsal joints. This hypermobility allows the portion of the foot anterior to Chopart's joint to become abducted farther on the backfoot and also supinated in compensation for backfoot eversion. The foot breaks

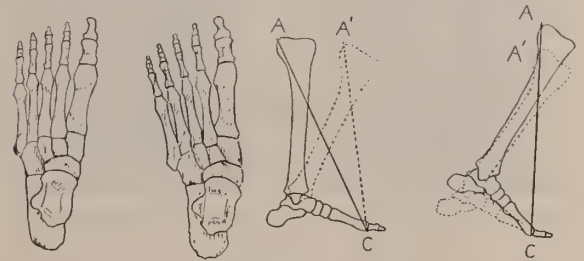


Figure 4

Diagrammatic representation of abduction of the forefoot on the backfoot.

Figure 5

The closed line figures represent the positions of the tibia at the beginning and at the peak of the heel rise during locomotion in the presence of a short Achilles tendon. The broken line figures represent the normal. The differences in knee and heel elevations are equal to the differences in the hypotenuses AC and A'C.

in its midsection, and bends, so that the inner side becomes convex and the outer side concave (Figure 4). It becomes a two-piece mechanism: forefoot and backfoot.

The foot leans to the inside because the independently mobile first metatarsal segment, which,

*Moment: The measure of the effect of a force in producing rotation.

because of this independence, is the weakest part of the foot, is burdened with an additional and a disadvantageous load. In other words, the part that is least capable of withstanding excess load is excessively loaded. As a result, the posterior end of the first segment is depressed along with the astragalus and the scaphoid. Anatomically this means dorsiflexion of the segment in opposition to the peroneus longus muscle, the action of which is plantar-flexion of the segment, because the peroneus longus is unable to hold the first metatarsal in plantarflexion against superincumbent weight.

The postural weak foot then is one in which the medial pillar of the foot has been broken down by the addition of an abnormally large portion of superincumbent weight. Weight is shifted to the medial side by internal rotation of the astragalus which is the inferior segment of the femoral-tibial-astragalar column. Rotation of the column is a consequence of lordotic superstructure posture and the rotatory moment that is developed maintains and accentuates internal astragalar rotation. This abnormal reception of weight on the dome of the foot is compensated in the underfoot by a break at the midsection so that the forepart of the pronated foot becomes further abducted, and also supinated, on the backfoot as the medial pillar is depressed.

PATHOGENESIS, SHORTENED ACHILLES GROUP

In the shortened Achilles group the terminal pathology is the same as that in the postural group; that is, valgus foot posture accompanied by the compensatory changes described above. The mode of production, however, is different.

Shortening of the gastrocnemius and soleus muscles and their common tendon may be a congenital defect, but more commonly it is acquired. It is seen most often in women who habitually wear high heeled shoes. In these instances great damage is done to the foot when there is an abrupt change from high heels to low heels, and, frequently, foot disorder is precipitated as a result of the unhappy practice of wearing high heels for everyday purposes and low shoes for sport. The stenographer who wears high heels all day and bowls or hikes once or twice a week in low sport shoes puts her feet and legs at a mechanical disadvantage when she is subjecting them to their greatest physical strain. Here foot disorder commonly begins as an acute traumatic

synovitis of the knee or ankle or as an acute plantar myofascitis.

Shortening of the Achilles group may result from anterior poliomyelitis. It may follow prolonged confinement in bed during illness, particularly when no provision has been made for keeping the feet dorsiflexed. Long imprisonment of the foot in splints and casts in the treatment of fractures will result in shortening of the Achilles tendon unless the foot has been fully dorsiflexed. Unfortunately the practice of advising patients to wear "sensible" low heels when resuming weight bearing after confinement of the foot in a cast or when arising from the sick bed is not always a good one. The high incidence of weak feet in the puerperium illustrates the point. The low heel is logical and beneficial only when dorsiflexion of the foot has been maintained; otherwise it is harmful.

In the presence of a shortened Achilles tendon that limits dorsiflexion of the tibia on the foot locomotion proceeds at a mechanical disadvantage that is tantamount to the degree of shortening (Figure 5). As the angle between the tibia and the foot is increased, both the heel and the knee must be raised progressively higher in order that the hypotenuse of the triangle formed by the knee joint, the heel and the first metatarsal head may cross the perpendicular. Clinically this disability is reduced by a compensatory abduction of the foot, a movement that reduces the effective lever arm by bringing closer together the planes that pass through the tibioastragalar joint and the first metatarsal head.

In locomotion the heel is not raised from the ground until the line of gravity of the body passes the ankle joint, which means that the heel is not raised until the tibia passes the perpendicular (Figure 6). Since contraction of the Achilles tendon inhibits advancement, or forward flexion, of the tibia in the tibioastragalar joint, flexion past ninety degrees, in the presence of this deformity, occurs below the astragalus, that is, in the subastragalar and astragaloscaphoid joints. As a result, there is created a powerful leverage action that tends to break and dorsiflex the medial pillar of the foot.

After the shortened Achilles foot has been forced into an abducted, or pronated, position, the forces acting to rotate the astragalar head medialward are accentuated and the valgus relationship between the femoral-tibial-astragalar column and the underfoot is increased. The

compensatory changes incident to locomotion with a pronated foot then appear as they do in the postural group; hypermobility of the tarsus and the first segment with dorsiflexion and splaying of the forefoot.

The changes described as characteristic of the pronated weak foot, or pes valgus, may not

midtarsus. When these patients resort to low heels, the Achilles is of actually insufficient length and the tarsus is then subjected to the distortion of forces that is consequent upon actual shortening of the Achilles tendon. It is then that the changes that lead to pes valgus take place.

PATHOGENESIS, ANATOMICAL GROUP

In weak feet of the anatomical group the two abnormalities that are encountered most commonly are shortness of the first metatarsal (Figure 7) and posterior location of the first metatarsal sesamoids (Figure 8). Credit is due to D. J. Morton⁷ for the conclusive demonstration

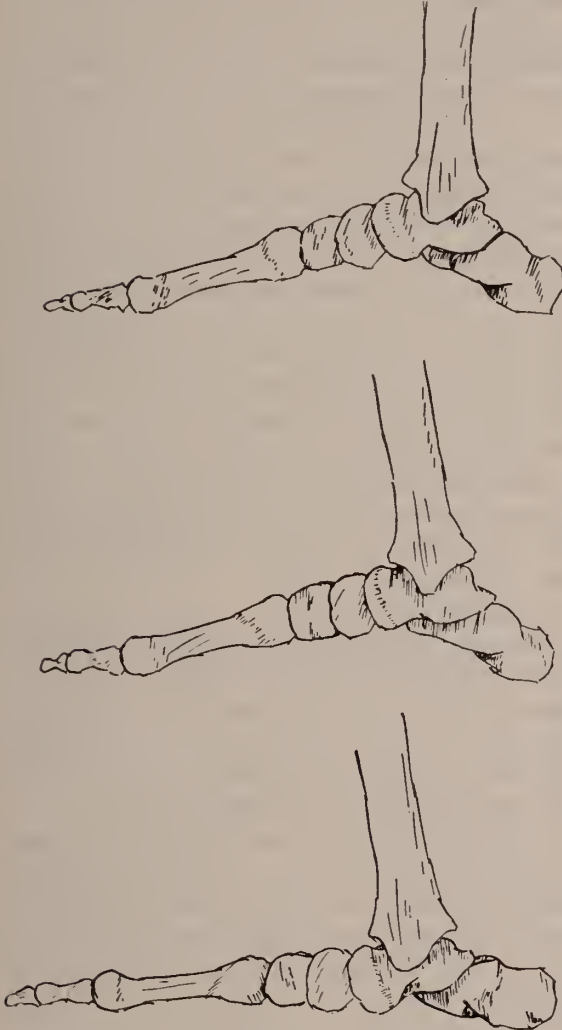


Figure 6

Diagrammatic representation of normal tibial flexion through the tibioastragalar joint (center diagram) and abnormal flexion with the astragalus through the astragaloscaphoid and subastragalar joints (lower diagram).

The latter occurs when the Achilles tendon is short.

accompany a short Achilles tendon in the patient who is a persistent high heel wearer (including bedroom slippers). In these patients the high heel compensates for Achilles shortening so that the tendon is of relatively sufficient length. In such instances there is marked diminution of function in the mediotarsal joints⁸ and the forefoot is plantarflexed on the backfoot through the



Figure 7

X-ray of foot with short first metatarsal. Note hyper-trophy of second metatarsal.

Figure 8

X-ray of foot with posteriorly located sesamoids.

of the importance of these congenital defects as predisposing factors in abnormal weight bearing.

When the first and second metatarsals are not of equal length, the one extending farther forward must serve as the principal fulcrum. If the first metatarsal is longer than the second, no harm results, because the former is so constructed that it may withstand leverage stresses. If the first is short, the second must act as the principal leverage member during locomotion. This relationship is harmful and gives rise to two untoward sequels; the second meta-

tarsal becomes abnormally dorsiflexed and the foot becomes pronated and abducted to allow the first metatarsal head to make contact with the ground.

The additional leverage burden thrown on the second metatarsal results in widening of the shaft and head of the bone and thickening of its cortical wall. The second segment, comprising the metatarsal and the middle cuneiform, becomes hyperextended, or dorsiflexed, and the natural plantar concavity of this portion of the segment is diminished. The ligaments on the undersurfaces of the joints between the metatarsal base and the cuneiform and between the latter and the scaphoid are subjected to a stretching action. The medial plantar nerve running in close proximity to these joints is subjected to the same stretching action and the pain that is characteristic of Morton's metatarsalgia arises from this.^{7,9}

Compensatory pronation is the natural consequence of a short first metatarsal because a shift of the foot into this position has the effect of lengthening the first metatarsal and shortening the second during locomotion. It places the plane passing between the two metatarsal heads perpendicular to the line of progression.

Posteriorly located sesamoids have the same effect as that of a short first metatarsal because the metatarsal head makes contact with the ground through the two sesamoid bones lying beneath it. The length of the lever arm is increased in the same manner and, likewise, compensation is made by abduction of the underfoot beneath the femoral-tibial-astragalar column.

CLINICAL DIFFERENTIATION OF TYPES

It may be observed readily from the foregoing that the weak foot is one that is subjected to the mechanical disadvantages of the pronated position during locomotion. In order that these mechanical disadvantages may be diminished, certain compensatory changes take place in the underfoot, but the compensatory changes, while enhancing locomotion, subject the foot to additional distortional influences and eventually they lead to a breakdown of the foot that gives rise to clinical symptoms and to varying degrees of incapacity. Each of the three common backgrounds for the assumption of the pronated position during locomotion, postural, shortened Achilles and anatomical, leads to a similar terminal pathological picture.

Treatment in all groups is resolved into correction of pronation, or, stated differently, correction of the valgus relationship between the astragalus and the underfoot. Since this correction is made properly only after the deforming cause has been eradicated or compensated, the differentiation into groups according to pathogenesis is extremely important. Again it is to be emphasized that elements of two or three groups may be present in any given instance of weak feet. Pronation of the foot, induced by an anatomical defect within the foot, allows the astragalar head to become depressed and internally rotated. Since the femur must follow the astragalar lead, internal rotation of the hip is the result. Pelvic inclination and lumbar curvature must then become readjusted to the forward shift of the femoral columns. The reason for this reversal of pathogenesis, that is, abduction of the foot leading to increased pelvic tilt or increased pelvic tilt leading to abduction of the foot, is that one is dealing with a closed rectangular system, the sides of which are the femoral columns, the pelvis and the ground and, therefore, motion in one part is reflected throughout the system.

Determination of faulty body posture is made best with the patient backed against a board or wall or behind a silhouette screen. A permanent record is made by means of a skiapantograph. It will be pointed out presently that the patient who at first appears to stand erectly does not always have good body posture.

Normally the head is held up and a line connecting the inferior margin of the orbit and the auditory meatus is on the horizontal. The shoulders are carried well up and back and there is free motion in the upper chest. In the fatigue attitude the head and shoulders are dropped down and forward.

The degree of lumbar lordosis with the associated alteration in pelvic inclination is the most important single factor to be considered in estimating the usual postural attitude of the individual. Lumbar lordosis and pelvic tilt are very closely associated because the anterior extremity of the pelvic girdle is raised or lowered, respectively, as superstructure load in the lumbar spine is shifted posteriorly or anteriorly on the sacrum. Usually lumbar lordosis is detected when it accompanies the fatigue attitude of the head and shoulders, down and forward, but frequently it

is overlooked when it accompanies hyperextension of the spine. In the latter posture the shoulders are well up and back and the individual appears to be overerect. In these patients lumbar lordosis is quite extreme and the pelvis is tilted backward to such a degree that the posterior protrusion of the buttocks is quite noticeable (Figure 1).

Increased pelvic inclination, no matter whether it accompanies the fatigue attitude or the hyperextended spine, is followed by internal rotation of the femoral-tibial-astragalar columns.

Clinically the pronated weak foot appears the same in any of the three groups. Body weight is concentrated on the inner border and the foot seems to lean to the inside. The medial border is convex, because of the bulging at the astragaloscaphoid joint, and the lateral border is concave. Tilting of the os calcis is present as a rule and is seen best from behind. The degree of tilting is estimated by the amount of lateral deflection of the Achilles tendon. The forefoot is abducted and supinated on the backfoot. The inner, or longitudinal, arch is depressed and the anterior arch through the metatarsal necks may or may not be obliterated. When it has been obliterated, the dorsum of the forefoot appears flat and wide and the foot is callused beneath the second and third metatarsal heads. Dorsiflexion and varus of the fifth toe are common accompaniments of depression of the anterior arch. When these deformities are present, a hard corn forms on the dorsolateral surface of the toe and soft corns appear at the points of abnormal contact between the fourth and fifth proximal interphalangeal joints. Calluses on the lateral aspect of the base of the heel and on the medial side of the first toe are frequent and they are evidences of locomotion in pronation because in this attitude the foot rocks from the outer border of the heel over the inner border of the first toe. If arthritis and periarticular fibrosis¹⁰ have not produced a rigid foot, the midtarsal joints will be found hypermobile. Signs of impaired circulation appear in the form of swelling, excessive perspiration and distended veins. Tenderness may be elicited beneath the calcaneoscaphoid ligament, at the ball of the foot and just below the external malleolus over the calcaneocuboid joint.

Normally one should be able to dorsiflex the foot to an acute angle of eighty to seventy-five

degrees. If flexion is limited to five degrees past the perpendicular, there is some degree of disability. The working range of motion in the tibioastragalar joint is tested by passively dorsiflexing the foot on the tibia with the foot straight, or slightly supinated, and the angle between the outer border of the foot and the tibia is taken as the dorsiflexion angle. When the foot is pronated, a false measurement is obtained because the Achilles tendon is displaced laterally. Likewise, a false estimate results when upward pressure is made on the forefoot rather than on the midfoot. The reason for this is that there is midtarsal hypermobility in the foot that has been subjected to prolonged pronatory injury and a portion of the dorsiflexion obtained by pressure on the ball of the foot represents movement of the forefoot on the backfoot. In making this test, upward pressure should be exerted beneath the midtarsus.

Diagnosis of the presence of a short first metatarsal and of posterior location of the sesamoids is made by x-ray examination.

Under ordinary circumstances these signs, readily elicited by static examination and by x-ray examination of the foot, form a sufficient basis for therapy. More accurate data, however, are obtained with the Schwartz electrobasograph.⁴ With this instrument the balance of the foot in motion is determined and its function is defined in relationship to three important time intervals: (1) the time body weight spends on the heel, the midfoot and the forefoot; (2) the time sequence of weight reception on the midfoot and forefoot; and (3) the time sequence of the transfer of weight from heel to midfoot and from midfoot to forefoot.

TREATMENT, ACUTE WEAK FEET

Treatment in all cases is directed toward correction of pronation and toward elimination of, or compensation for, the abnormalities producing it.

Acute weak feet that present synovitis and myofascitis with swelling and tenderness are treated with rest. In these acute cases much time is saved in the end by confining the patient to bed until the swelling and tenderness have subsided. When feasible, the feet are enclosed in plaster-of-paris casts for a period of one to two weeks after the disappearance of the acute symptoms. The casts are applied with the feet

in the overcorrected position of varus with good dorsiflexion.

Usually, because of the marked improvement following two or three days' rest in bed, patients insist on ambulatory treatment, and because of this, ambulatory treatment is begun without the application of casts more often than not. However, before any active measures are instituted against the causative factor, the threshold of muscular fatigue must be elevated to a point at which the patient may follow his daily occupation without marked discomfort. This means ambulatory rest as a substitute for bed rest and is provided by strapping or by arch supports.

Strapping holds the foot in the varus position and acts as a substitute for the tendinous sling on the inner side of the foot. Adhesive tape is used alone or in conjunction with a soft felt pad that is shaped to fit the non-supporting surface of the foot.

Strapping obviously is a temporary measure, and the patient is convinced of this without difficulty. Unfortunately he is not as easily convinced of the temporary nature of the arch support, and time must be taken to impress him with this idea to insure cooperation. Any support, with the exception of the Whitman plate, is only a temporary device whose function is the assistance of soft structures until the threshold of muscular fatigue has been elevated to a normal level. Whatever benefit is derived from its use as a temporary crutch is invalidated when it is used as a curative device. It is worn continuously for a period of four to six weeks and its use is then tapered down for the next two to four weeks so that it may be discarded at the end of two to three months.

The use of commercial arch supports is a mistake for the reason that variations of anatomical conformation that are encountered in feet cannot be met by these factory-made, sized appliances. Since there is not a constant relationship between the length and width of the foot and the shape of its dome, as determined by the height, width, length and angle of the dome, accurate standard patterns cannot be designed in foot sizes.

With the help of a shoemaker, a very satisfactory support is made from leather and harness felt. A pattern of the foot is cut from a piece of paper and is marked just behind the first,

third and fifth metatarsal heads, at the calcaneo-cuboid junction and just anterior to the medial tuberosity of the os calcis (Figure 9). These



Figure 9

Tracing of patient's foot and pattern used in making support.

marks are used as guides and the shape of the concavity of the under surface of the foot is drawn on the paper. The design of the supporting surface is transposed to a pattern of the shoe insole and that part of the pattern anterior to the supporting surface is cut away and discarded. Two pieces of leather are cut out from this finished design with a small flap left on the inner side of the piece that will be the top of the support. The two pieces of leather are stitched by a shoemaker to make an envelope and the envelope is filled with harness felt to the proper height.

If after a four week period of strapping, or support, the patient still experiences muscular fatigue at his daily occupation, he must either rest or change his occupation until the muscles can be called upon for active work. Any attempt to institute active ambulatory treatment of cases in the postural and shortened Achilles groups in the presence of muscular fatigue will fail. If the patient is unable or unwilling to discontinue work, he is given a support that is worn until he is able to take the time necessary for muscular repair or for operative correction.

From one point of view it is unfortunate that an arch support will relieve the severe symptoms that accompany weak feet because patients experiencing this relief are prone to continue in the use of supports. Many of them fall prey to commercial arch support salesmen and neglect

to return for postural and muscular correction. However, the course outlined must be followed because active therapy that is initiated in the presence of muscular fatigue is doomed to failure.

TREATMENT, POSTURAL GROUP

Active treatment of patients with weak feet of the postural type aims at a readaptation of the weight bearing mechanism to the superstructure by postural control. Such specific muscular control is obtained by several maneuvers that impress upon the patient the elements of correct posture and by a series of exercises that brings opposing muscle groups into balance. Since the success of any system of exercises depends upon a discipline that will instill the patient with a consciousness of good posture and at the same time a spirit of cooperation in developing and maintaining it, the system that creates discipline by its directness and simplicity is the most effective.

The exercises are performed three times each day and they are done with the feet bared as soon as possible. Each time, the exercises are preceded by the wall and chair maneuvers so that the patient has a fresh impression of correct posture while he is running through the exercises.

In the wall maneuver the patient stands with his back against a wall, with the head, shoulders, buttocks, calves of the legs and heels touching the wall. The hand is placed flat between the small of the back and the wall and as the small of the back is pushed against the hand, lumbar lordosis is reduced and pelvic inclination is decreased. Maintaining this attitude, the patient walks around the room. On return to the wall, the lumbar and pelvic postures are checked with the hand at the small of the back. The maneuver is repeated five times.

The chair maneuver was described by Wiles⁵ as an exercise for the peroneus longus. In the performance of this maneuver the patient sits well forward on a chair with the foot pointing straight ahead and at a right angle with the tibia. A mark is made on the floor about one and one-half inches medial to the first toe and the front part of the foot is moved to the mark. Only the forefoot is moved, the tibia and the heel remaining stationary. The ball of the big toe is now pushed against the floor through the action of the peroneus longus. This movement

is difficult of accomplishment at first because the tibialis anticus is not easily inhibited, but the contraction of the peroneus longus can be felt when the fingers are placed over the lower third of the outer side of the leg and thus a check is established on the performance of the exercise.

INSTRUCTIONS FOR PATIENTS

Standing:

1. Head up, shoulders back, abdomen in, pelvis up.
2. Feet four inches apart.
3. Toes pointing straight ahead.
4. Weight on outer edges of feet.
5. Arches cupped, like palm of hand.

Walking:

Take a two mile stretch daily, preferably at noon. This does not include walking while at work. Keep in mind:

1. Toes pointing straight ahead.
2. Weight on outer edges of feet.
3. Toes gripping the ground, to cup the arches.
4. Keep conscious of "heel," "outside of foot" and "big toe and spring."

General:

1. When standing, practice gripping ground with toes.
2. When walking, do the same.
3. When sitting, cross feet and practice cupping arches.

Exercises and Postural Aids:

Twice daily, barefoot as soon as possible, and toes always straight ahead. TIME—SIX MINUTES.

1. Wall maneuver. Begin at wall, walk around room five times, checking posture at wall each time.
2. Chair maneuver. Depress and elevate the big toe twenty times (each foot).
3. Neck rotation with muscles on stretch—five times.
4. Arms extended forward and backward with deep breathing—ten times.
5. Touch floor with knees straight—five times.
6. Leg raising, lying on back—five times.
7. Push back into floor and relax alternately—ten times.
8. Up on toes, cupping arches by throwing weight on smaller toes—ten times.
9. Up on toes; roll out on sides and down—ten times.

10. Feet together; roll out on ankles—ten times.

11. Walk across room on toes and back on outer sides of feet—three times.

12. Manipulate feet as directed—five times.

The patient must make a conscious effort to overcome the pronated posture of the foot during standing and walking. The heel must be supinated and the astragalus must be rotated externally against it. In locomotion the foot should roll from the heel to the outer side of the midfoot and back to the first metatarsal. This action is practiced by walking slowly around the room while concentrating on "heel, outer side of foot, big toe and spring."

After a four to six week period of continuous support, elevations are placed on the shoes and the use of the mechanical support is diminished steadily during the following two to four weeks. At the end of this time the supports are discarded, but the shoe elevations are retained.

In 1929 Steindler¹⁰ called attention to the dynamic distortion produced by the internal heel

by a counter correction of the compensatory forefoot supination by an external wedge (Figure 10).

The heel wedge tapers from the medial side and extends completely across the heel. The height varies from $\frac{3}{16}$ to $\frac{1}{4}$ inch at the inner edge. The external wedge is placed beneath the fifth metatarsal head. It measures from $\frac{1}{8}$ to $\frac{3}{16}$ inch in height and tapers medialward. After the supports have been discarded, the use of the shoe elevations is continued. At the end of a month they are lowered and they are discarded after a variable period of time that depends upon clinical progress.

TREATMENT, SHORTENED ACHILLES GROUP

Treatment of weak feet in the shortened Achilles group must proceed slowly and with great caution. The physician must bear in mind that the objective of treatment is increased length of the Achilles tendon and the calf muscles and that progressive restoration of the natural mechanics of the foot must follow increased Achilles



Figure 10

Shoe with wedges beneath the inner side of the heel and beneath the fifth metatarsal head.

Figure 11

Shoe with metatarsal bar.

Figure 12

Compensating insole used in treatment of weak feet in short first metatarsal group.

lift that is used so commonly in the treatment of weak feet. The internal lift on the heel serves a very useful purpose in shifting body weight to the outside of the foot, thereby correcting pronation of the os calcis. However, in so doing, it increases the supinatory torsion the forefoot has undergone to compensate for pronation of the backfoot. In order that the forefoot-backfoot relationship may be restored to the normal, the correction of the backfoot pronation by an internal wedge must be supplemented

length. The common practice of correcting the shoe environment of the foot before the tendon has been lengthened precipitates an acute weak foot. When a high heel is worn, the mechanical disadvantages of the short tendon are not in play against the subastragalar joint but these forces are brought into action when the shortened Achilles foot is placed in a low heeled shoe. For this reason progress in diminishing heel height must follow progress in Achilles lengthening, step by step. Heels are lowered by change of

shoes and by the removal of $\frac{1}{8}$ inch sections.

The Achilles tendon is lengthened by exercises, passive stretching and by walking with metatarsal bars.

In performing the first exercise the patient faces a wall and supports herself against it with the extended palms. While keeping the palms in contact with the wall, she backs the feet away from it. During this maneuver the heels must be kept in contact with the floor, the toes must point inward and body weight must be concentrated on the outer borders of the feet. The latter is very important because the legs will act as levers against the subastragalar joints if body weight is centered over the inner borders of the feet and thus the stretching action will be applied to the medial pillars of the feet rather than to the Achilles tendons.

In the second exercise the patient squats with the toes pointing inward. With the heels remaining in contact with the floor, body weight is moved forward and the Achilles tendons are subjected to a stretching action.

In the third exercise the patient assumes the erect position and rocks backward over the heels. As the toes are lifted from the ground body weight is thrown forward and the patient balances on the heels.

Passive stretching is employed twice or three times daily. This is done easily by means of a two-inch canvas strap. The patient sits on the floor with the knees extended and each foot is pulled upward by the strap which is held in the hands and passes beneath the middle of the foot. It is important that the strap pull up from under the midfoot just anterior to the calcaneus and it is important also that the hands be separated so that the hand on the inner strap pulls considerably medialward. In this maneuver the foot is supinated as it is dorsiflexed.

Walking with metatarsal bars is begun after some progress has been made with the exercises and passive stretching. Rounded leather bars of $\frac{1}{4}$ inch height and $\frac{3}{4}$ inch width are nailed to the shoe soles just behind the first and fifth metatarsal heads (Figure 11). The patient takes a two mile walk in these shoes each day. The metatarsal bar, which acts as an anterior heel, has a very marked stretching influence on the calf. Here again attention must be paid toward keeping the feet supinated during the exercise for if the feet are pronated during the walk, the pow-

erful leverage action of the leg is spent on the subastragalar joint and not on the Achilles tendon.

TREATMENT, ANATOMICAL GROUP

Weak feet in the short first metatarsal group usually require some permanent mechanical device that will add to the length of the medial pillar. In many cases, however, the action of the peroneus longus can be developed to such an extent that it can carry its extra burden quite effectively without mechanical aid. Such a result is a possibility only when the first metatarsal is not greatly shortened. The muscle is developed by means of the chair maneuver described in a previous paragraph.

The leather insole advocated by Morton⁷ has been found to be a very satisfactory form of therapy in this group of cases. A compensating platform is attached to the insole just beneath the first metatarsal head (Figure 12). Another effective device is the tapering metatarsal bar which is similar to the bar that has been described in connection with the shortened Achilles group. The bar tapers laterad and its medial elevation measures one-fourth inch.

All discussion of operative methods used in the correction of weak feet has been omitted purposely.

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STETHOSCOPIC

A doctor's little daughter, deeply interested in radio, glanced one morning into the office where her father was testing the heart and lungs of a patient. "Getting any new stations, daddy?" she inquired.

TYPES OF SKIN GRAFTS AND THEIR INDIVIDUAL APPLICATION

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Of the many operative procedures in plastic surgery, the skin graft is the most commonly employed. These transplants have a wide variety of application, being used to cover surface defects following many causes. Frequently they are utilized to repair skin destruction resulting from burns, to replace traumatic loss following injuries, and extensive resections for malignancy, especially those of the breast and around the head.

Except in identical twins the transfer of skin of one individual to another is futile. It was believed at one time that if both the donor and recipient were of the same blood group that success would follow. True indeed, the grafts may grow at first, but eventually melt away. Non-homoplastic or zoo-grafting, the transfer of animal skin to humans, is spectacular but 100 per cent unsuccessful.

Skin grafts may be arbitrarily classified into the free and pedicle varieties. Free grafts may further be subdivided into part-thickness grafts and free full-thickness grafts.

PART-THICKNESS GRAFTS

For the sake of simplicity and certainty of take the split type (as defined later) is most useful. The very thin epidermal or Thiersch Graft is good for the rapid covering of defects where cosmesis and function are not important. It will not, however, control subsequent underlying scar contraction.

Pinch Grafts, either the thin (Reverdin) or the thicker (Davis) type we have not found to be very practical. It has been our experience that larger grafts grow better and give a much better final result. Pinch grafts give rise to considerable contraction due to scarring between the grafts. The healed covering does not stand trauma well. Carcinoma occasionally develops in pinch-grafted areas since these poorly vascularized surfaces easily break down. They likewise give the poorest cosmetic result. Any of

these conditions frequently give rise to the necessity of excision and re-grafting with another type. Although we admit their usefulness in the hands of the occasional operator, as time passes pinch grafts are being used less and less by the trained plastic surgeons because of the poor results obtained. It must be realized, however, that more skill and care is required in the use of split grafts, free full-thickness grafts, and pedicle flaps, and that the surgeon performing such operations but occasionally, is apt to have many serious failures.

In more recent years the thicker or intermediate split graft has found a very extensive field of usefulness and among surgeons doing any quantity of skin grafting, it has practically supplanted the older thinner Thiersch and Pinch types. This variety has been named Thick Razor Graft by Gillies and Split Skin Graft by Blair. It includes the papillary layer of the corium and tends to control subsequent scar contraction. In many instances it gives nearly as good cosmetic and functional results as the free full-thickness graft. At the same time it is as simple to manage as a Thiersch graft. These can be quickly cut into any size or shape and under proper surgical technique one can be sure of practically 100 per cent take. Furthermore, the donor site heals without the necessity of closure by other means. For practical purposes this graft is one of the most useful and can be used on many areas of the face and other mobile sites where the more complicated free full-thickness graft formerly has been employed. Not only is its entire management simpler and more certain, but the time consumed in handling any given case is about half of that necessary where free full-thickness grafts are employed. Small and large defects can be covered with equal ease and success.

Razor grafts grow best and with the least amount of subsequent contraction if any existing granulations are first excised down to normal subcutaneous tissue. They may also be placed upon a freshly prepared bed following the excision of a healed scar or malignant growth.

Using the Blair-Brown suction box technique, these grafts may be quickly cut to the desired thickness and dimension. Furthermore, donor sites such as the abdomen and back can be used when large quantities of skin are necessary and with a degree of success that does not accompany other techniques.

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Having been cut to the desired size the graft then is transferred to the recipient area. Once applied to its new bed it is secured in place under normal tension by fine non-absorbable sutures. Occasionally small stab wounds are made in large

seven days but may be examined sooner, particularly if infection of the base had been under doubtful control at the time of grafting or if significant infection appears to have developed postoperatively. The sutures and excess graft are



Fig. 1

This represents the healed state following immediate application of split grafts following extensive breast resection for malignancy. This wound was healed two weeks post-operatively, as promptly as if skin flaps had been preserved and sutured over.



Fig. 2

"A"—Old burn contracture of flexor aspect of elbow joint. Limiting scar excised and defect immediately covered with thick razor grafts. "B"—Complete healing and return of function.

grafts to allow for the escape of serum and blood. It is not necessary to trim off the edges to the exact size of the bed. Any overlapping can be excised at the time of the first dressing. Gentle pressure is then made to express any fluid from beneath the graft and a pressure dressing consisting of xeroform vaseline gauze, dry sterile gauze and a moist sterile marine sponge immediately applied.

The donor site is dressed with xeroform vaseline gauze and sterile dry dressings and is not

then removed. If possible one should expose the graft to the air at this time. Massage and motion can ordinarily be started with safety in twelve to fourteen days (Figures 1 and 2).

STENT GRAFTING

This method is useful for the covering of mucous membrane surfaces, such as in the mouth or nostrils, or for the application of free grafts to any other depressed, curved, or irregular surface.

A piece of soft sterile dental modeling compound is pressed into the previously prepared re-



Fig. 3

"A"—Burn contractures of 4th and 5th fingers of 12 years duration. "B" and "C"—Excellent functional result after excision of scars and replacement with free full-thickness grafts.

usually touched for about ten days, at which time the dressings are soaked off and one will generally find the underlying area completely healed. If needed, further grafts can be taken from the same donor site four to six weeks later.

The graft is usually inspected in about five to

recipient area and an impression made. A split graft, with the raw surface outward, is then covered over the model which is next re-inserted into the pocket and pressure applied. After ten days the mold is removed and the raw surface will be found completely epithelialized.

FREE FULL-THICKNESS GRAFTS

The Free Full-Thickness or Wolfe Graft is most useful for a fresh, clean raw surface where good mobility with minimum hazard of secondary contraction and the highest grade of cosmesis are desirable. Its usefulness then naturally applies to certain deformities about the face and hand (Figure 3). Its use and aftercare are more complicated and the certainty of a take more hazardous than with the split thickness graft. To insure uniform success of free full-thickness grafts, the following principles must be observed:

1. The graft must be cut to the exact size of the defect to be covered.
2. The base must be free of fat.
3. Hemostasis must be perfect.
4. The graft must be maintained under normal tension with the edges carefully and accurately approximated with fine non-absorbable sutures.
5. The graft must be secured to its base by firm, even pressure at about 30 millimeters of mercury.
6. It must be immobilized for ten to twelve days unless some obvious complication warrants an earlier inspection of the graft.

The work of Ferris Smith has shown 30 millimeters of mercury to be the optimum pressure necessary to favor the taking of this graft. This pressure may be approximated by bandaging a sterile marine sponge over the graft, but is obtained more accurately by the use of the inflatable rubber bags devised by Smith.

SEIVE GRAFTS are a modification of Wolfe grafts. They consist of free full-thickness skin that has been cut smaller than the defect to be covered. Multiple stab wounds are made in the graft which is then stretched out to fit the defect. The stab wounds epithelialize over. The management is otherwise similar to Wolfe grafts. Their usefulness is chiefly around large joints where good function is more important than the cosmetic result and may be obtained with a minimum amount of full-thickness skin. These grafts are ordinarily cut $\frac{1}{3}$ longer than the defect, but need be only $\frac{1}{3}$ to $\frac{1}{2}$ as wide as the area to be covered.

PEDICLE GRAFTS

There are times when under the best technique the use of any free graft will be unsuccessful. In such conditions one may use a pedicle flap, that is, one in which the blood supply remains intact

at the donor site until its distal end, which has been transferred to the new bed, has established its own new vascular supply. In planning a pedicle graft it is wise to try to include a large artery in its substance, so as to further guarantee its viability. The more simple kinds are the rotated flaps from the border of the defect or a pedicle graft taken from a distant site. Pedicle flaps from the scalp, which were developed by the late Professor Lexer of Munich, for the covering of extensive facial defects in men, find little useful application in America since most men in this country refuse to wear full beards. Although they may be shaved, the owner finds an extremely tough beard over which to labor.

In certain types of linear scars, especially those involving the flexor surface of joints and certain types of neck contractures, the Z-plastic, which involves the creation of two rotated flaps, will often produce sufficient relaxation to make further surgery unnecessary to give adequate functional results.

TUBE PEDICLE GRAFTS

Probably the most useful vascular transplant is the tube pedicle variety. This remains as one of Gillies' greatest contributions to plastic surgery. Its use makes possible the reconstruction of any part or all of the face with definite success. Its use also permits the graft to be taken from a distant point, where subsequent scarring is on an area not ordinarily exposed to view. Usually they are taken from the neck, pectoral region or the upper arm. They may also be raised from the abdomen and brought up to the face by the "jump flap" method, where the wrist or hand is used as a carrier. Abdominal skin, however, does not give as good cosmetic results as that taken from the upper arm or pectoral region, but suffices quite admirably in neck and axillary contractures.

These tubes are constructed by first making two parallel skin incisions in a selected area. Incisions are then carried beneath the strap-like flap, undercutting from one side to the other, leaving the ends attached. Hemostasis of the raised flap is perfected and its edges rolled together and sutured beneath, producing a tube resembling the handle of a suitcase. The donor site is closed by advancing and suturing the adjacent skin margins beneath the tube, or if the area is extremely large the raw surface may be covered with a split skin graft (Figure 4).

The tube is then dressed and left in this position until it has become well vascularized. At the end of this time the distal end is cut across, the tube re-opened and sutured into the recipient area. The proximal end of the tube remains at-

so doing more than one defect can be covered simultaneously.

CHOICE OF GRAFTS

In planning the repair of any lesion the procedure of choice to obtain the best results can only be decided after an accurate diagnosis of the existing pathology has been made. Once this has been established the method of repair is usually quite obvious. One must keep in mind the ease with which the area may be covered, the final cosmetic and functional result, and also the comfort and safety of the patient during the period he is under the reconstructive surgeon's care. Likewise he must avoid producing further defects in order to repair the original one.

Pedicle flaps are desirable when the question of maintaining the viability of the graft is hazardous. When they can be obtained nearby, simple pedicle or rotated flaps usually suffice. If one wishes to transfer a subcutaneous fat pad with the skin graft it is always necessary to use a pedicle graft (Figure 6). If one must go a distance for vascularized grafts, then the tube pedicle method becomes the choice. For recon-



Fig. 4

Extensive defect of trunk following construction of long thoracoepigastric tube pedicle. Donor site covered by primary application of split skin grafts rather than attempting to suture underlying skin flaps with extreme tension.

tached until the graft has become securely vascularized in its new bed. It is then cut off and the excess portion returned to its original site or discarded.

This graft should not ordinarily be more than two and one-half times as long as it is wide, for



Fig. 5

"A"—This long tube was constructed by first raising the two ends, leaving an intermediate bridge to guarantee vascularity in early stages. "B"—At a later date the tube was completed with safety. The tube shown in Fig. 4 was constructed in a similar manner.

fear of endangering its blood supply. An exception to this rule may be made if the tube is raised in two halves, leaving the central portion attached for at least two weeks before completing the tube (Figure 5). Double or triple tubes may be raised from a common base if desired. In

struction about the nasal tip, lips and larger cheek defects, the tube pedicle grafts are almost a necessity. For nasal covering, the older Italian method should be condemned because of the danger of emboli and the irksome position for the patient.

When there is a healthy base against which proper pressure can be made, some type of free graft immediately becomes the method of choice for obvious reasons of simplicity.

Burns should be grafted as early as possible.

fibrous tissue developing in the granulating bed and thus jeopardizing its blood supply, as well as permitting scar contraction to develop beneath the graft.

Excessive granulations may be painted with



Fig. 6

"A"—Complete loss of soft tissues including fat pad of flexor aspect of terminal phalanx, following gangrenous process. Although some bone was lost due to superficial osteomyelitis, the attachment of the flexor tendon was not disturbed. "B" and "C"—Show result with skin covering containing good subcutaneous fat pad following application of pedicle flap.

By so doing, unlimited discomfort may be spared in addition to the financial economy gained by the patient to have his wounds closed in a short period of time by a permanent covering. This surgery may be done just as soon as the granulating bed is clean, which is ordinarily from two to three weeks following the original trauma. By so doing one also eliminates the horrible defects, some of which may be permanent, that result from the contraction of the scars which would otherwise subsequently develop (Figure 7).

If dealing with an early fresh but infected granulating area, the preparation may be hastened by applying moist gauze dressings of physiological saline or Dakin's solution under moderate pressure, such dressings being kept moist and changed every few hours. More recently we have been using Azochloramid solution in triacetin. We have found it to be much more efficient and more simple to use, and furthermore the dressings have to be changed only once every 24 hours.

Any old ulcerations or other areas that have long standing granulations present should be excised. If the resulting area is relatively clean, grafting may be done at once, otherwise the base is permitted to regranulate for a few days until firm pink healthy granulations are present in all areas. We do not ordinarily make bacterial counts, relying instead upon our experience and judgment to tell when the bed does or does not present an adequate healthy appearance. One should not wait beyond this point for fear of

tincture of iodine or phenol, and then sliced off with a sharp knife down to the desired level. This bed may be grafted at once, or if hemostasis cannot be secured by application of warm saline



Fig. 7

This 22-year-old boy was severely burned in a furnace explosion at the age of 3. Owing to the long time interval, marked permanent bony and soft tissue damage has occurred thereby handicapping reconstruction possibilities in this type of case. The condition would never have occurred had this patient been grafted shortly after his burn.

packs, sterile dressings under moderate pressure for 24 to 48 hours will usually produce a healthy dry bed that will be ready for grafting. It is

absolutely essential that the bed be dry because hematoma formation beneath the graft will spell immediate disaster.

When burned patients have been neglected and resulting scars have been permitted to occur it is then necessary to completely excise the cicatrix, following which a permanent type of graft is immediately applied.

In dealing with lesions created by traumatic loss, the defect should, if possible, be grafted at once.

When one is replacing skin following the surgical excision of new growths the graft should be applied immediately if the neoplasm is benign. On the other hand, if one is dealing with a malignant lesion, it is usually wiser to postpone plastic repair until one year after the cancer surgeon has completed his resection, unless a temporary split graft is applied to convert the defect into a closed wound.

PLANNING THE TYPE OF REPAIR

To be successful the surgeon must be able to imagine his problem in the final healed state. In



Fig. 8

"A"—Shows keloid scar on side of neck following old burn. "B"—Shows size of defect covered with graft following excision of keloid. This increase in size is dependent upon the elasticity of the adjacent skin which returns to its normal position when freed from a contracting scar. This is a common occurrence in dealing with healed burns. (Dark color of graft due to Iodine stain applied for illustrative purposes).

other words, he must have a clear vision of the ultimate result before he begins the repair. This prerequisite is just as important as a knowledge of the operative steps involved.

In deciding upon the type of graft to use, one must consider the simplicity, the comfort and safety of the patient, as well as the final cosmetic and functional result. The amount of skin loss must be accurately estimated. The lines of skin

elasticity must be observed so as to avoid the development of subsequent contractures.

When one is dealing with an adequately prepared granulating wound, grafts may be applied at once. With healed defects the scar is first removed and the resulting base made dry. This cicatrix must be thoroughly excised.

It is noted usually that in healed burns the scar is much smaller than the actual defect. One is often surprised to note the large size of the defect created by excision of such a scar (Figure 8). This increase in size is dependent upon the elasticity of adjacent skin which retracts away from the freed margin. The surgeon will save himself considerable embarrassment if he remembers this point and is equipped to close the resulting defect with what generally necessitates a graft.

POSTOPERATIVE CARE

Organization may be hastened by infra-red heat or diathermy. I do not like massage in early stages for fear of widening the pliable new scar tissue at the suture lines. After organization is complete it is excellent.

One is sometimes confronted by the development of an undesirable color in a prominent graft. This is usually inevitable, but it may be made less conspicuous by the use of various commercial tinted cold creams or more permanently by a skilled tattoo artist.

CONCLUSIONS

1. Grafts should be applied to defects created by skin loss as early as possible in order to prevent unnecessary discomfort, financial loss and more permanent deformity from subsequent contractures.

2. When dealing with a cicatrix the scar is completely excised, following which a permanent graft is immediately applied.

3. Careful thought must be given in selecting the most desirable graft to be used for the particular defect, keeping in mind the ease with which the area may be covered, the final cosmetic and functional result, as well as the comfort and safety of the patient during the period he is under the plastic surgeon's care.

4. And finally, it should not be overlooked that the surgeon undertaking this type of work must be endowed with imagination, courage and patience.

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CHRONIC FIBROPLASTIC ENCAPSULATING PERITONITIS WITH COMPLICATIONS

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Chronic fibroplastic encapsulating peritonitis is not extensively mentioned in the American literature but is frequently discussed in the foreign literature. Scattered articles are found from Finland, Denmark, Russia, England, Australia and a large number from Germany and France. The condition is given various titles, as peritonitis chronica fibrosa deformans, chronic adhesive sclerosing peritonitis, idiopathic peritonitis, chronic hyperplastic peritonitis, polyserositis, sugar icing peritonitis and, if etiology may be incorporated into the name, the author of this article adds to the confusion by calling it allergic peritonitis as applied to the large number of previously described cases, where the etiology was admittedly "unknown."

A cross section of the literature reveals many varied etiological factors involved in this type of peritonitis. Tuberculosis has been assigned as a cause and without doubt the tubercle bacillus can be given full credit in a certain percentage of cases. This view is held quite strongly by most of the French writers. Syphilis has also been mentioned, but it hardly stands the test after being repeatedly ruled out by serological investigations. Interstitial nephritis as a cause is really without substantial proof. Streptococcic infection is well known as a factor in peritonitis, but as a factor in encapsulating peritonitis it is exceedingly rare, as its devastation is so rapid that insufficient time is allowed for the production of this particular type of peritonitis. However, three cases of streptococcic encapsulating peritonitis have been reported in the literature.

The majority of writers have reported their cases as of unknown etiology. At the present time it is quite generally accepted that allergy is a cause of many of our bodily ills, some of which may be quite severe. Everyone has witnessed severe skin and mucous membrane reactions from either drug or food allergy. Foreign serum reactions have been common and no one can logically say that the peritoneum is immune to allergic manifestations. Upon these facts and clinical observations the writer predicates the hypo-

thesis that the peritoneum is subject to allergic phenomena and that it may account for many of the cases of proliferating plastic peritonitis which have been described as of unknown etiology.

As to symptomatology, it can be said that usually the amount of pathological findings is out of proportion to the symptoms. It may be called a clinical paradox that some of these cases have considerable pathologic manifestations and have very little symptoms to sound warning of the usual impending tragedy—intestinal obstruction. A very small minority of the cases show ascites as the principal objective symptom and very few subjective symptoms.

Allan reports a case of chylous ascites in which paracentesis was done forty-nine times, withdrawing ten to twenty pints each time. Postmortem findings showed a "great fibrous thickening of grayish-white, glistening membrane involving pericardium, pleurae and abdomen." There was no evidence of tuberculosis and the etiology was unknown.

Osler discusses proliferative polyserositis very briefly, stating that there are instances of chronic peritonitis in which the mesentery is so shortened by this proliferative change that the intestines form a ball situated in the midline. After removal of the exudation, this ball can be felt as a solid tumor. The intestinal wall is greatly thickened and the mucous membrane is thrown into folds like the valvulae conniventes.

One of the earliest cases recorded in American literature was a postmortem reported by Welch of Johns Hopkins in 1908 in which he noted his findings as a case of chronic organizing peritonitis of unrecognized etiology; intestinal obstruction resulting from numerous transverse infoldings or constrictions of the intestinal wall, these being held in place by bridges of dense, organizing, false membrane.

Dowd reported a case in 1923 in which a tumefaction involved four-fifths of the small bowel. This was resected but the patient died. At postmortem there was found complete obliteration of the abdominal cavity.

Cubbins and Marvel report a case of intestinal obstruction and tumefaction. They found adhesions of a clear and hyaloid character with etiology as unknown. However, the patient died nine months later of a pulmonary tuberculosis.

Devine of Australia reports a case where the visceral and parietal peritoneum were united to such an extent that there was practically no peritoneal cavity. The cecum and sigmoid were covered by a glistening, opaque, milk-white membrane. The small bowel had become encapsulated to form tumefactions and intestinal obstruction. Surgery was followed with recovery.

Asger Naerra reported a male, aged thirty-two, with no history of tuberculosis, who was operated upon for acute appendicitis but no pathological changes were found. Eight months later he was operated upon for nephrolithiasis but it turned out to be intestinal obstruction. He found a constricting band extending from the ileocecal angle over the root of the mesentery to a loop of small bowel at the junction of the mesentery and gut, producing a volvulus. Convalescence was stormy but the patient made a complete recovery. However, two months later he was again admitted to the hospital with a diagnosis of intestinal obstruction due to ileus. Operation at this time revealed more adhesions and the gut was glued together to the parietal peritoneum. Recovery followed surgical interference, and the patient was then given deep x-ray therapy as recommended by French surgeons.

Price and Kennedy of Philadelphia reported a severe case of plastic tubercular peritonitis and the patient lived thirty years following extensive surgery. Incidentally they report the use of iodoform dusting powder as a means of preventing the reformation of adhesions following surgery in these cases.

Kaiser and Karewski in the German literature stress the retracting phenomena in this type of peritonitis. They cite numerous cases following appendicitis in which there was no exudation but at postmortem found total obliteration of the abdominal cavity.

Owtschinkow, a Russian author, reported a case in which no surgery was done but postmortem revealed almost total obliteration of the abdominal cavity resulting from a type of peritonitis "which must stand out as a distinct anatomopathological entity apart from other types of peritonitis."

Wetherell reported a case brought to surgery three times; first for appendicitis with a right floating kidney, at which time there was found a thickened peritoneum which was not associated

with plastic peritonitis. One year later the patient was operated upon for obstruction of the large bowel complicated by a right ovarian tumor. One month later the patient was again operated upon for obstruction of the small bowel, and at this time the abdominal cavity was almost obliterated by the retracting peritoneal adhesions. Wetherell considers a thickened parietal peritoneum as pathognomonic of this very troublesome peritonitis which will invariably lead to intestinal obstruction.

CASE REPORT

The patient was a female, aged fifty-three, unmarried; height five feet four inches, weight 237 pounds. Her early childhood history was unimportant except for a tonsillitis at the age of ten. In her early adult life she complained of pains diagnosed as usual colic, although she says she had "stomach trouble" all her life. Obstinate constipation has been a persistent complaint. Blood and pus have been found in the urine at intervals for twenty-five years. She has been conscious of a large tumor in the abdomen since 1920 which extended from two inches above the umbilicus to the symphysis.

On further questioning it was learned that an appendectomy was performed in 1906, dilatation and curettage in 1908 and removal of the right ovary in 1910. Perusal of the hospital records for these operations was impossible but evidently there was no septic peritonitis.

Urinalysis before operation showed 30 red blood cells and 10 pus cells per field. Blood count showed 4,000,000 red and 8,000 white blood cells. Wassermann reaction was negative.

The patient was operated upon in September 1938 under nitrous oxide and ether anesthesia. A midline incision was made extending two inches above the umbilicus to the pubes, passing through a three inch layer of fat. The peritoneum was found to be thickened and difficult to enter. After opening it no definite abdominal cavity could be demonstrated because of visceroparietal adhesions. The large fibroid was definitely adherent in all directions. After freeing all adhesions anteriorly and laterally it was hoped that the fibroid could be delivered, but this was secured by adhesions to bowel and omentum superiorly and posteriorly to bowel and parietal peritoneum. These adhesions extended downward over the sigmoid and over the lower edge of fibroid and bladder. Dissection of the bladder adhesions produced a rent in that viscus which was repaired. A seven-pound fibroid was finally removed from all its attachments, including a subserous attachment to the fundus of the fibroid uterus. In the right lower quadrant was found a mass of ileum which was originally attached by adhesions to the large fibroid, also to the fibroid uterus and its adnexae and scars. Freeing of this portion of the bowels was tedious and laborious, but eventually accomplished only

after tearing the ileum. This could not be satisfactorily repaired so that it was necessary to do a resection and lateral anastomosis. Removal of the fibroid uterus was done in the usual manner. Amfetin was placed in the reconstructed abdominal cavity, allegedly to prevent adhesions. The wound was closed without drainage.

The patient was in extreme shock following operation. Blood transfusion and other supportive measures were given. Her convalescence was not as stormy, as might be expected. At no time was her abdomen distended, and the repaired bladder functioned exceptionally well, since on the third day she passed a quart of urine. A superficial abscess developed in the lower angle of the wound which cleared up in the normal period. Her bowels functioned without laxatives when she left the hospital. A specimen of urine was examined on the day of her discharge and no blood or pus was found. She left the hospital on the eighteenth postoperative day in good condition and a month later she reported being in excellent health.

SUMMARY

1. Review of American and foreign literature dealing with a rare form of peritonitis.
 2. Various etiological factors are discussed.
 3. A new factor in etiology is suggested, namely allergy.
 4. Emphasis is placed on a thickened peritoneum as a pathognomonic sign.
 5. Intestinal obstruction is the most common reason for surgical interference.
 6. Narration of a chronic case with complications and recovery.
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SOME USES OF PICRATOL (SILVER PICRATE) WITH SPECIAL REFERENCE TO CHRONIC OTITIS MEDIA.

SUPPLEMENTARY REPORT

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In my article published in the Illinois Medical Journal in February, 1933, I discussed in detail the results obtained in the treatment of chronic otitis media with $\frac{1}{2}$ per cent. to 1 per cent. solution of silver picrate, at that time called picratol. The third case reported therein was the only case up to that time in which a complete cure had not resulted, and reasons therefore were suggested. If the reader will refer to that article this supplementary report will be much more interesting and instructive.

The patient mentioned therein, Mrs. M. H.,¹ afflicted with chronic otitis media of five years duration—and other ailments as mentioned in the previous article—had been treating her ear at home according to my directions. Since she could not come to the office for treatments I instructed her to cleanse the external auditory canal with boric acid solution on cotton applicators and then instill the silver picrate into the ear twice daily, and to keep this up regularly and persistently. Regularity and persistence were stressed because she had failed completely to cooperate in these respects before, due to various reasons, some of which she could not control.

During an acute exacerbation of the otitis media in October, 1932, in which both ears produced a purulent discharge—this being the first time the left ear had discharged—the patient began using the silver picrate in both ears twice daily as directed. The left ear ceased discharging in three or four weeks, and the right ear ceased discharging in about sixteen weeks, the patient stated when I next saw her six months later, April 27, 1933. At that time there was no perforation in the left tympanic membrane, although it seemed very slightly lacking in luster. The large perforation in the right drum had decreased to about one-fifth its former diameter and the middle-ear contained no pus or mucus. Two of her children had scarlet fever at this time and two days later she became quite ill from the same cause, but the chronic ear infection did not flare up while she had the severe scarlet fever streptococcus infection in her pharynx and nose. On May 16, 1933, I saw her and found the perforation in the right ear drum to be completely closed and her hearing had improved somewhat. At the time of this writing, June, 1933, the drum has remained closed five weeks and the ear has been free of discharge eighteen weeks. This, apparently, is the first time this right ear drum has been closed in five years.

Another instance of the possibilities of this treatment for chronic otitis media with perforated ear drum may be cited in the following incident: The very capable associate of one of

our city's foremost eye, ear, nose, and throat specialists had been treating such an ear in a young girl for about a year with no appreciable improvement. While he was out of the city on his vacation for about two weeks or so he sent the patient to a general practitioner to whom I had spoken of my favorable results in such cases with the silver picrate treatment. He decided to try it in this case. When the specialist returned he was very much surprised to find very marked improvement in the ear both as to cessation of discharge and closing of the perforation. In fact, the ear was nearly completely cured. The specialist was eager to know how the general practitioner had treated the ear. I never heard any later information about that particular case.

Furthermore, I have used silver picrate in a number of cases of acute otitis media in which spontaneous perforation of the tympanic membrane had occurred, or surgical incision of it for drainage had been done, and in every case the result was rapid cessation of discharge and closure of the opening in the drum. In these cases the patient's parent or some other third party was instructed to cleanse the ear canal with boric acid swabs or by irrigating with a rubber ear syringe, using warm boric acid solution. Next dry the canal with dry cotton swabs and then instill enough silver picrate to fill the canal. Allow it to remain so for ten minutes. Then a sterile gauze bandage may be placed over the ear and the patient allowed to move about as much as the severity of his illness will allow. This procedure is repeated once or twice daily depending on the amount of purulent discharge from the ear. If the discharge is very copious, twice a day would not be too often.

I also found this drug very effective in the treatment of otomycosis, every case clearing up entirely in a reasonable time. In these cases I always cleaned the fungus growth out of the canal as thoroughly as possible by irrigating the canal with warm soda solution of moderate strength and plucking out pieces of the fungus mass with ear forceps. Then I dried the canal with a cotton swab. After this the silver picrate solution was instilled into the canal and allowed to remain ten or fifteen minutes. The canal was then dried thoroughly with cotton applicators. The patient has this procedure repeated once daily at

¹I saw this patient on September 25, 1938, and found both ear drums free from signs of inflammation and with no perforation in either drum. She said she has had no recurrence of the otitis media, so far as she knows.

home and returns to the office for my inspection and cleansing of the canal every second or third day. Usually in two to four such treatments at the office all visible fungus is gone. The patient is then instructed to continue the home treatments for a week or two to be sure all fungus is eradicated.

It is very important in such cases to dry the canal thoroughly after the silver picrate has remained in the canal ten to fifteen minutes because lack of moisture makes the growth of fungus slow or impossible, while moisture favors its growth.

I have not had a failure in this treatment for otomycosis.

This makes the results in the treatment of chronic and acute otitis media and otomycosis with silver picrate one hundred per cent. good to date. By this I mean complete cessation of the discharge and complete closure of the perforation in the tympanic membrane in every case of chronic and acute otitis media, and disappearance of the fungus growth in every case of otomycosis. I do not consider the results in this small series of cases of chronic otitis media representative in a final way, for many more cases would have to be followed to get a truly representative evaluation of the merits of this treatment. However, I do believe that the results are very noteworthy and should lead anyone, even the most critical or skeptical, to try this drug further in the cases wherein the tympanic membrane has ruptured spontaneously or has been incised.

CONCLUSIONS

1. Silver picrate may prove to be the most satisfactory antiseptic we have had to date for treatment of otitis media with an open tympanic membrane.

2. It seems from these few cases that we may hold a reasonable hope of getting a complete closure of the tympanic membrane even when the perforation has been present for years.

3. It follows that we may also hope to improve the patient's hearing, for this is the usual result of cessation of discharge and complete closure of the perforation of the drum.

4. Silver picrate as used in my cases is an entirely satisfactory treatment for otomycosis.
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PSYCHOSES IN CHILDREN

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Although it has been estimated that one out of every 22 persons becomes a patient in a hospital for mental diseases in a generation, and that the chances of a white individual fifteen years old contracting a psychosis or a severe incapacitating neurosis during a lifetime are somewhere near one in ten, the number of children who become psychotic is relatively small. There is, however, a great need for some standardization of ideas as to what constitutes a psychosis in a child.

In discussing psychoses, whether in child or adult, it is necessary to define clearly what is meant by a psychosis. It may be regarded as a disorder involving the adjustment of the body as a whole to the environment, due to a disturbance in the integrating mechanisms of the body. For years the origin of this disturbance was looked for in the central nervous system. But recently, as a result of the successful use of such drugs as insulin and metrazol, which are known to affect the autonomic nervous system, we are becoming increasingly aware that the integrating mechanism primarily involved in the psychoses is most likely the autonomic nervous system, which coordinates the internal workings of the body. When these are disturbed a condition of disequilibrium is produced, which prevents the individual from responding as a unified organism to his environment.

When the psychosis sets in, what we observe essentially is a disturbance of behavior. In children it is particularly difficult to distinguish between behavior problems and definite mental abnormalities, that is, between personality difficulties and personality disorganization. When we speak loosely of disorganized behavior of children we may be referring to some simple emotional disturbance, to delinquent acts, to neurotic behavior, or to mental abnormality.

When a child develops a psychosis, the way the illness expresses itself will depend upon the characteristics he has developed, and this necessarily differs according to his age and experiences. He is less complex and less rigid than the adult.

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Presented at meeting of Chicago Council of Medical Women, June 8, 1938.

His characteristics are necessarily limited by the extent of his physical growth and his emotional responses, and the restrictions of a fairly uniform environment. Yet even young infants show individual characteristics of behavior in their responses to such routine as feeding, bathing and other care, although these responses become fairly habitual quite early in life. As the child begins to adjust to more persons and circumstances his general method of response becomes more typical. By the age of two, differences are evident in the types of behavior children resort to most consistently; for example, one is resentful when thwarted, one is aggressive, and one runs away from a difficult situation. These personality characteristics soon become habitual responses which grow more and more permanent as they are repeated, until finally the typical adult personality evolves.

The emotions in the child are less inhibited and controlled than those of the adult, and their relation to his behavior is more obvious. When an egocentric child, for example, no longer is the center of attention he may withdraw from social contacts. This may be referred to as a schizoid tendency. Or, he may develop an idea that others are unfair to him, and if such an idea expands and becomes exaggerated, it may be the basis of a definite paranoid tendency later on. Again, a child may show outbursts of anger because he is unwilling to give up satisfactions, and such outbursts are often among the early manifestations of abnormality in children, expressing themselves in violence and destruction.

Due to our limited knowledge of the etiology and pathology of some of the mental diseases, our classifications of psychoses are necessarily terms which merely characterize the symptom picture and often tell us nothing of the illness itself. As to these classifications, instances of most of them have been found in children. From statistical studies now available it appears that schizophrenia is the most common psychosis in children. Lurie¹ in a review of one thousand problem children studied at the Cincinnati Guidance Home, found that twenty, that is, two per cent., were psychotic, and of these twenty, thirteen were classified as schizophrenic. Kasanin and Kaufman² selected the children under sixteen who were admitted to the Boston Psychopathic Hospital during 1923-1925. Of a total admission of about 6000, 160 were children

under sixteen, that is, 2.7%. Of the 160 cases, 65 were classified as psychotic, and of this group, 21 were regarded as schizophrenic, 13 had encephalitis, seven psychosis with psychopathic personality, and four manic-depressive psychosis, all in the manic phase. The remaining twenty were variously classified into seven miscellaneous groups.

At the Psychiatric Institute of the University of Illinois, in a total admission of about 700 in the last seven years, 26 were under 16. Of these, 14 or two per cent. were classified as psychotic, the group including six instances of schizophrenia, three of feeble-mindedness with psychosis, two of manic-depressive psychosis, two unclassified, and one with an acute psychotic episode.

Regarding the illness known as schizophrenia or dementia praecox, it was considered by Kraepelin to be a definite disease entity, labeled praecox because it presumably had its onset during adolescence, and dementia because there was a tendency to mental deterioration. Today we realize that this condition can have its onset at an age beyond adolescence, and that dementia, in the sense of an intellectual loss, does not occur. Rather, there is an emotional loss, a loss of interest and initiative, and an avoidance of active competition, all of which can better be labeled a deterioration rather than a true dementia, such as occurs in senility, in severe cerebral arteriosclerosis or general paresis.

Some writers have described cases of schizophrenia having their onset as early as the fourth year, but most cases occur during and after pubescence. Of the early childhood schizophrenias, the catatonic and hebephrenic types are most common. The catatonic types are sometimes seen during the acute infections or intoxications and are characterized by waxy flexibility, incontinence, mutism and apathy.

The hebephrenic type often has its beginning in childhood, with queer, distorted behavior which may cause the child to be brought to a child guidance clinic. Of 62 children with severe behavior problems studied over a period of months as resident pupils in an Orthogenic school, 15 were classified as schizophrenic. The histories of the development of this condition and the results of examinations showed many divergent backgrounds and symptoms. There were, however, a number of common character-

istics. The children in general had average intelligence, and did not show any deterioration of intelligence. They all had difficulty with school work, however, most of them doing poor work in spite of good intelligence. Most of them were seclusive, had few friends, and tended to find fault with other children. All of them showed various degrees of mental blocking by their inability to follow directions, their frequent appearance of daydreaming in the midst of activity, and their inability at times to respond verbally to questions.

Going back into the early histories of these children, and the reasons for their referral to a special school, it was found that they had had increasing difficulties at home and at school, were disobedient, failed to cooperate in routine family affairs, and were considered queer or abnormal by others. Often they fought with other children or complained that others teased them, and were irritable, destructive and irresponsible.

In no case was there any gross physical abnormality, except for low basal metabolic rates in three instances.

The emotional behavior of these children could be generally grouped into two types, the emotionally indifferent and the emotionally disorganized. Four of the fifteen cases were characterized as quiet, unassuming, indifferent and emotionally unresponsive. When frustrated they tended to retreat or take refuge in the protection of adults. They rarely responded with enthusiasm and could not be motivated to carry on the usual activities. The remaining eleven children, regarded as emotionally disorganized, showed periods of excitement and of anxiety. At times their excitement was accompanied by destructive behavior. School difficulties arose especially because of their irritability, quarrelsomeness and fighting. This aggressiveness, however, was never directed toward any cooperative group activities, although a number of the children appeared to be very ambitious in the sense that they attempted to be creative in solitary interests such as writing, drawing or in developing inventions. Some of them utilized all of their leisure time in writing plays or as they termed it, creating ideas for the future.

Manneristic behavior similar to that seen in adult schizophrenic patients was commonly shown by these children. One boy often arose

suddenly and walked around the room, or suddenly and without provocation struck another child. One girl of seven was observed to kneel suddenly and remain in that position for some time.

None of these children expressed any hallucinations, although children with schizophrenia at times have hallucinations which are relatively simple. According to Mandel Sherman and Bert Beverly³ in an article published in 1924, when hallucinations do occur in children they reveal a clear-cut sequence of development, passing through stages of indefinite to definite, unacceptable to acceptable, doubtful to positive. Usually at the beginning they were obvious efforts at compensation. One boy of fourteen had been subject to violent emotional outbreaks and fighting with other boys. He was larger than the other children in his school room, and seemed worried about it. He complained that he felt something moving in his head and body, and said that after fighting his head felt better. He complained of having to argue with himself about being good and being bad, and whether he should fight. Later he saw persons on each side of him, one saying, "be good," one, "be bad." At first he reacted with anger to the hallucinations, then gradually accepted them as explanation of his difficulties and justification of his behavior. This type of hallucination probably represents a beginning dissociation of the mental activities, or what is commonly referred to as a splitting of the personality.

Such hallucinatory disorders illustrate the fact that the psychosis is primarily an affective or emotional upset, which secondarily affects the patient's thinking, which itself is not disturbed. That psychoses are primarily emotional is seen perhaps more clearly in children than adults. They may appear to daydream in the classroom; they lack ability to concentrate, lose confidence in themselves, and seem to be in a kind of daze, but when questioned may merely say that they feel "nervous," that they cannot sleep well, and so on. As the condition progresses there may be periods when they do not seem to comprehend what is said and cannot recall what they have learned. Out of this bewilderment may develop a delusional system which serves as some sort of escape from difficulties.

In these dissociative conditions language dis-

orders are not infrequent, although the peculiarities of speech, such as occur in adult psychoses, are not clearly shown by children. Perhaps the one disturbance shown most often is that of blocking of speech. In the midst of conversation, they may stop speaking, and then begin to mention some irrelevant topic. Addressing oneself as though addressing another person also may occur. One boy of twelve seemed disoriented at home and frequently wandered away from his classroom. He was unsocial, accused others of interfering with him, and preferred to read or play solitaire games rather than take part in group activities. On a number of occasions he was observed talking to himself while playing checkers alone, speaking as though his right hand represented himself and his left hand another person. At times he made a move and said loudly, "Burton, a swell move, you'll win the game." This addressing oneself as though speaking to someone else, like referring to oneself in the third person, is common in children about the age of three or four, but when it occurs as late as twelve, is probably indicative of lack of good integration of the personality.

This same boy also tended to elaborate his responses in great detail when asked a question. He was asked, for example, how many hours he spent in the classroom each day, and after some deliberation replied, "Nine to twelve, and twenty-five minutes for recess. Then one to three and ten minutes for the toilet. Altogether my answer would be about three hundred minutes." His speech also showed evidence of difficulty in the use of concepts. Once when he was weighing himself he asked, "Is this right, am I sixty pounds tall?" When told height was measured in feet and inches, he said, "Well, I am growing all the time, so I can be any height."

Another characteristic change that occurs in schizophrenia is in the mood or affect. At first glance this illness might not seem clearly to be a mood disturbance, and yet in most schizophrenic patients the loss of feeling is obviously present, together with an incongruity between the expression of affect and the mental contents.

Mood is a state of the body, dependent upon a shift in the visceral activities away from equilibrium. In the manic-depressive type of psychosis these shifts of vegetative function which express themselves as swings of mood are

outstanding and clear-cut. In normal children, as in normal adults, variations in mood occur, but they are never extreme as in psychotic patients. Some children show rather consistently a push of activity comparable to the hypomanic state, but normal children with persistently downward swings of mood in the direction of depression have not been described to my knowledge.

The manic-depressive type of psychosis is rare before the fifteenth year, although manic-like symptoms may occur earlier, in chorea, in delirium, and in advanced stages of tuberculosis. Kasanin and Kaufman, as mentioned previously, found among about 6,000 patients admitted to the Boston Psychopathic Hospital between 1923-1925 only four cases of manic-depressive psychosis which developed before 16 and these four had their onset after 14.

Both manic and depressive states have been described in connection with acute epidemic encephalitis. Rhein and Ebaugh⁴ observed seven cases of this type at the Neuropsychiatric Clinic of the Philadelphia General Hospital, in children from eight to fourteen. Some were in the acute state of the illness and others had had the disease from six months to years prior to the onset of the mental symptoms. In the group, suicidal attempts were frequent, were nocturnal and appeared related to states of agitated insomnia rather than to any ideas of self-condemnation so common in adult depressions. The depressions of these children tended to be transient and not infrequently were associated with a delirious condition.

There is considerable question as to what type of psychosis an individual is likely to develop if he breaks down. Attempts have been made by questionnaire methods and interviews to determine whether an individual who becomes schizophrenic was as a child a different type of personality from one who becomes manic-depressive. Landis⁵ by the use of the questionnaire method, concluded that these two groups were not essentially different in their characteristics. Specifically, he found that there was little difference in the number of schizophrenic traits reported by the two types of patients. He recognized, however, the unreliability of the questionnaire method. Bowman⁶ in a more recent study, utilized the interview method, interviewing relatives and friends of hospitalized

adult patients to obtain a description of their early personality characteristics. Then he compared the results with those of a normal control group, and found that the pre-psychotic child, regardless of the type of psychosis he develops later, tends to be a model child, to have few friends, to indulge in solitary amusements, to be a follower, close-mouthed and uncommunicative, to bear pain less well than the normal, to be self-assertive, to have less initiative than the normal, and to be very ambitious. Comparing the pre-psychotic personalities of the group who became schizophrenic with the group who became manic-depressive, he showed that both groups have the same percentage of model children, which means that the very good child who never gets into mischief does not necessarily become schizoid or shut-in later when he breaks down, but may just as likely develop a manic-depressive type of psychosis. Bowman found, however, that the group developing a manic-depressive disorder had more friends, indulged more in recreation with others, and tended more to be leaders than did the schizophrenic group. The two groups showed no difference in sensitivity or self-estimates, but the manic-depressive group had been more sympathetic, day-dreamed less, were less absent-minded, had a greater energy output, more initiative and a slightly higher work ability than the schizophrenic group.

Such studies as these illustrate the fact that the way a psychosis expresses itself, that is, the symptom picture, depends upon the type of person who is ill. Recent studies of adults show this clearly, that the individual symptoms are more closely related to the cultural and experiential background than to the existing intrinsic disturbance.

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A RESUME OF SULFANILAMIDE TREATMENT OF PERITONSILLAR ABSCESS

With a report of two cases combined with non-specific protein therapy.

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Sulfanilamide and its derivatives have been used for streptococcic infections of the tonsils and pharynx for the past four years with varying results. Its reported use in the treatment of peritonsillar abscess for that period, however, has been meager.

The author's practice covers rural districts where the average patient is twenty-two to thirty-two miles from the nearest hospital, and where home sanitation in most instances is neither inducive to nor encouraging for home surgical procedures, minor or major. Nursing technique by members of the family or neighbors, is likewise quite deficient in efficiency—and hence, surgical methods, unless absolutely essential, are strictly avoided in the home. The success of any medical therapy over surgical interference where the latter is commonly used, is therefore welcomed and appreciated by physician and patient alike.

The writer desires to present two cases of peritonsillar abscess, in which, combined with the partial use of non-specific protein, sulfanilamide therapy produced dramatic results without resorting to any surgery usually required in such conditions.

The literature on sulfanilamide and non-specific therapy is so voluminous that the author shall not attempt to review the publications on these two agents, and instead shall briefly limit the discussion to its elemental phases. It is sufficient to state that sulfanilamide has demonstrated bacteriostatic and bacteriocidal action against strains of streptococcus (particularly the hemolytic group) in vitro, vivo, and animal experimentation¹. Some workers, as Domagk² and Bliss³ believe phagocytosis produced by sulfanilamide also accounts for the disappearance of the streptococci.

Non-specific therapy in its various forms as boiled milk, typhoid fever vaccine, and commercial preparations such as omnadin, lactogen, proteolac, etc., has been used with favorable

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results in various infectious diseases for years. By introducing a foreign protein into the body, the production of antibodies is stimulated, which in turn, act upon the invading bacteria in preparing them for ingestion by phagocytes. Omnadin⁴ was used in these two cases.

A review of the available literature (obtained from the library of the American Medical Association) on the use of sulfanilamide specifically for peritonsillar abscesses reveals a comparative paucity of reports—considering the popularity of the drug during the past few years. McIntosh⁵ wrote of one case in which the use of sulfanilamide had no noticeable effect on the clinical course, incision becoming necessary. Long and Bliss⁶ in a classical report on sulfanilamide therapy and its derivatives, listed five cases of peritonsillar infections as “treated and cured.” They used sulfanilamide pure (as para-amino-benzene-sulfonamide tablets), prontosil 2.5% solution, prontosil tablets, and prontosil tablets.

Harvey and Janeway⁷ commenced using sulfanilamide subcutaneously and orally with surgical intervention. However, the appearance of an acute hemolytic anemia due to the sulfanilamide forced them to discontinue treatment with the drug.

Hubert and Leroux⁸ of France reported the most complete series of peritonsillar abscess treated with a sulfanilamide derivative (prontosil). Cultures from the diseased tissues all proved the existence of hemolytic streptococci. Twenty-two cases were reported, the patients being all adults and of both sexes. All were treated with sulfanilamide at first, the earliest case being seen in 1935. Sixteen cases (ten unilateral and six bilateral abscessed areas) were cured without any surgical interference, the time of cure ranging from three to four days to a maximum of twelve days. Six cases, despite improvement with the sulfanilamide derivative, had to be incised before cure was obtained.

Two cases of peritonsillar abscess, treated with combined sulfanilamide and non-specific protein therapy, are presented. Due to the mentioned distance from hospital laboratory facilities, no bacteriological or hematological studies could be made.

Case 1: white male, aged 25 years, laborer; first seen at his home on Sept. 8th. He had complained of a sore throat and fever since Sept. 6th, and had been incapacitated from work since then. Previous

treatment by another physician consisting of a gargle and “cold tablets” had not produced any amelioration of symptoms. When first seen by the writer, the patient presented the following symptoms: sore throat, “aching pains all over the body” (so bad that the patient would first lie on the floor and then on the bed vainly seeking relief); pain on talking or swallowing, with inability to swallow any solid foods or thick liquids (as malted milks); loss of appetite; severe weakness, and, “hot and cold spells.”

The objective findings were: temperature 102 degrees F. (oral); pulse 90; respiration 24; generalized perspiration was profuse. Edema and tenderness along the left lower jaw with bilateral cervical and axillary adenopathy were present. The rhinitic picture was that of an acute rhinitis (mucopurulent nasal discharge, nasal congestion and inflammation, and moderate lower and mid-turbinate hypertrophy). Examination of the oral cavity revealed large, bilateral, supratonsillar fluctuations, extending upward behind the anterior pillars, and centrally towards the uvula. There was, consequently, considerable narrowing of the pharyngeal orifice, explaining the difficulty in swallowing anything but the simplest of liquids. Edema and inflammation of the uvula and the pharynx also existed. A thick, creamy-yellowish material oozed from several areas of the supratonsillar masses and the tonsillar crypts. The mouth was filled with a thin, colorless but tenacious salivary secretion.

A diagnosis of bilateral peritonsillar abscess was made and treatment instituted as follows:

(a) General and supportive measures; alcohol sponging, pushing fluids and fruit juices, non-fatty clear soups, broths, etc., and enemata.

(b) Omnadin, 2 cc intramuscularly.

(c) Sodium bicarbonate, one-fourth teaspoonful twice daily as long as sulfanilamide was being taken.

(d) Sulfanilamide tablets (crushed at first to facilitate swallowing), two five-grain tablets at three-hour intervals twice that night (total dose for the evening, 20 grains).

(e) Ung. iodi denigrescens, N.F.V., for the lymphatic adenopathy, applied locally.

Sept. 9th: Home visit; temperature 100.4 degrees (oral), pulse 86, respiration 20, perspiration not so profuse. The patient complained less all around. He felt more comfortable, and while still unable to swallow anything but sugared water, mixed fruit juices and soups, experienced less discomfort when attempting to swallow. The abscess appeared to have diminished in size, and greater amounts of pus oozed out. The patient stated he could “spit out” more “corruption,” and with greater ease. Treatment for that day consisted of another two cc of omnadin intramuscularly, and a total daily dose of sulfanilamide of fifty-five grains; spaced at three-hour intervals in five to ten-grain individual doses.

Sept. 10th: The patient forwarded a message that he felt “so much better,” and requested the home visit for that day dispensed with. However, he was directed to take forty-five (45) grains of sulfanilamide as the total dosage for the day, in suitable, divided doses.

Sept. 11th: The patient surprised me by walking into the office on this day. A spontaneous rupture of both abscesses had occurred the evening of the tenth, and the patient stated he had "spit out big gobs of rotten stuff." His pulse rate was 76 per minute and regular; the temperature (oral) 99 degrees F.; the respiration 18. His aches and pains were slight, and his perspiration had disappeared. He felt hungry for food the first time since the eighth, and had already partaken of a fairly substantial, solid meal, with no trouble in swallowing. Examination revealed a marked diminution in the size of the peritonsillar swellings, and pharyngeal edema and inflammation. Some purulent material still oozed from the involved areas, but the oozing was insignificant compared to the seepage seen three days ago. He felt well enough to remain out of bed. His daily dosage of sulfanilamide was thirty grains.

Sept. 12th: Office visit; his subjective symptoms, save for slight weakness were gone. Objectively, both tonsils showed a moderate hypertrophy with slight oozing of a creamy pus from the crypts. There were no signs of any supratonsillar tumefactions. Because of the tonsillar oozing, he was advised to take sulfanilamide as follows: Sept. 12th, thirty grains total; Sept. 13th and 14th, 20 grains total daily dose; Sept. 15 to 20th, one five-grain tablet three times daily.

He was seen in the office Sept. 21st, and the pharyngeal and tonsillar conditions were completely cured. Incidentally, the patient had been working again since the 15th of September. An added note of interest was that previous similar attacks throughout the past three years had invalidated the patient from two to four weeks.

Case 2: White male, aged 28 years, gasoline station worker. He came into the office Sept. 19th, complaining of a sore throat and neck, and feeling "chilly and feverish at the same time." The findings in this case were: pulse 86 beats per minute; temperature (oral) 100.8 degrees F.; respiration 20 per minute. Examination of the mouth revealed an angry-red pharynx, hypertrophied cryptic tonsils, and bilateral tonsillar tumefactions, from which oozed thin, creamy, purulent material. Cervical adenopathy was present on both sides. The diagnosis of a bilateral peritonsillar abscess with associated pharyngitis was made. The treatment consisted of:

- (1) Rest in bed.
- (2) General supportive measures as alcohol body rubs, light diet, pushing of fluids and fruit juices.
- (3) Ung. iodi denegrescens, N.F.V., topically for the cervical adenopathy.
- (4) Omnadin, two cc intramuscularly.
- (5) Sulfanilamide tablets, daily total being 55 grains, in suitable divided doses. The usual instructions were given as to abstaining from any other medication and cathartics, as well as taking one-fourth teaspoonful of sodium bicarbonate twice daily.

Sept. 20th: Office visit: The soreness of throat and neck had decreased considerably. The temperature (oral) was 100 degrees F., and the pulse 80 beats

per minute. The pharyngitis was less, the peritonsillar tumefaction smaller in size, and greater drainage of a greenish-cheesy pus was evident. The cervical adenitis was about the same as the day before. He was given another two cc of omnadin intramuscularly, and that total daily dose was set at fifty grains.

Sept. 21st: The throat and neck discomfort was slight; the pulse 80 beats per minute, temperature (oral) 99 degrees F., respiration 18 per minute. The peritonsillar tumefaction, as well as the pharyngitis, had practically disappeared. A slight amount of purulent material could still be seen oozing from the tonsillar crypts. The cervical adenopathy was barely palpable. The sulfanilamide dose for the day was forty grains.

Sept. 22nd: The pulse, temperature, and respiration were entirely normal. The cervical adenopathy was extremely slight. The pharynx showed no signs of inflammation, and there were no visible evidences of the abscesses. The tonsils, while normal in size, exuded a slight amount of mucopurulent material. The patient expressed a desire to return to work, and did so on the twenty-third. Meanwhile, the sulfanilamide was continued as follows: Sept. 22nd, 40 grains total daily dosage; Sept. 23-25th, 30 grains total daily dosage; Sept. 26th and 27th, 20 grains total daily dosage; Sept. 27th to 30th, a maintenance dose of one five-grain tablet thrice daily. A two cc intramuscular injection of omnadin was given on the 22nd to hasten the recovery.

The patient was seen the twenty-fifth of September, and the general and local (oral) examinations were entirely negative.

COMMENTS

While the non-specific protein (omnadin in these instances) aided a great deal, the author, in the light of his past experiences with omnadin alone in peritonsillar abscesses, believes the sulfanilamide principally responsible for the rapid cures produced in the two cases. It is felt that the combination has a therapeutic synergism which makes such a combination more effective than the use of either agent alone. It must be also emphasized that, where the abscess is producing severe constitutional and occluding reactions, proper incision is perhaps the wiser and emergency choice.

Of the author's two cases of bilateral peritonsillar abscess, one burst spontaneously, followed by an almost immediate cure. The second case retrogressed from the abscessed and associated conditions to normalcy without any rupture. The time of cure in one case (referring only to the abscess itself) was five days, and in the second case four days.

CONCLUSIONS

- (1) A résumé of the available reported cases

of treatment of peritonsillar abscess with sulfanilamide and its derivatives is given.

(2) Two cases of peritonsillar abscess treated with combined sulfanilamide and non-specific protein is presented, obtaining cure in four to five days without any surgical interference.

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CRANIAL NERVE DISTURBANCES DUE TO ARTERIOSCLEROSIS OF THE INTRACRANIAL ARTERIES

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The attention of one of us¹ was attracted to disturbance of the functions of one or more of the ocular motor nerves in patients with diabetes and evidences of cerebral arteriosclerosis at a time when acute epidemic encephalitis was still prevalent. Signs of ptosis and diplopia were the source of confusion with that disease but subsequent investigation showed that no other evidence of encephalitis was present, the general symptoms of infection were absent, the cerebrospinal fluid was not abnormal and the patients often completely recovered without the characteristic manifestations of chronic encephalitis. Since then we have observed other patients with cerebral arteriosclerosis who showed involvement of one or more cranial nerves, followed the clinical course of some and examined the brains of a few.

The majority of our patients were females, although men were not immune. They were all middle-aged or elderly individuals, some of

whom had undergone therapy for diabetes or arteriosclerosis with or without hypertension but all were free from manifestations of other intracranial disease. The presence of diabetes was not invariable but signs of arteriosclerosis were found in all cases.

The onset of the syndrome was usually sudden, although a severe frontal headache often preceded for several hours or a day. Sometimes the patient awakened in the morning with the syndrome fully developed, or else the disturbance reached its height within a few hours and further progression was not observed. There was never any loss of consciousness, apoplectic form or epileptiform seizures.

Focal Clinical Findings: These depended upon the special cranial nerves involved, among which the most frequent were the oculomotor, abducens, optic, auditory, trochlear and trigeminal, in the order named. The disturbance was usually limited to one cranial nerve and rarely involved the homologous nerve of the opposite side except in the case of the auditory nerves and occasionally when both carotid arteries pressed against each lateral border of the optic chiasm.

Involvement of the *third or oculomotor* cranial nerve manifested itself by ptosis of one upper eyelid and paralysis of the extrinsic muscles of the eyeball innervated by that nerve which excludes only the external rectus and superior oblique muscles. The eye was pulled laterally due to unopposed action of the external rectus and movement away from this position was impossible. The intrinsic ocular muscles of the iris were not always involved and then rarely completely. The pupil was often dilated but not maximally, and reacted poorly to light and in accommodation. Complete sparing of the pupillary fibers was not uncommon. The *sixth or abducens* nerve was also frequently affected, resulting in paralysis of the external rectus muscle. The patient could not pull the eye externally beyond the midline in the horizontal position. Involvement of the *fourth or trochlear* nerve was seen only once. It resulted in paralysis of the superior oblique muscle and inability to pull the eyeball down and out. Involvement of each of these three ocular nerves produced diplopia which was characteristic for that cranial nerve and indicated the specific location of the lesion. In addition, third nerve

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lesions caused a characteristic ptosis and pupillary dilatation.

The *optic nerve or optic chiasm* was implicated next in frequency. Sudden loss of various portions of the visual fields was the presenting complaint. Careful perimetric determination revealed binasal or peculiar horizontal hemianopsia, or monocular sector defects but never a homonymous hemianopsia. The field defects were not accompanied by changes in visual acuity, disturbances in the appearance of the optic nerve head or pupillary abnormalities. No evidences of parasellar neoplasms were found.

The *eighth or acoustic* nerve was very frequently involved either singly, in conjunction with another cranial nerve or with frank signs of diffuse cerebral arteriosclerosis. The disturbances of the acoustic nerve consisted of extremely disagreeable subjective noises within the head, synchronous with the pulse and in the form of rhythmical sounds of escaping jets of steam, pounding of riveting intensity, whistling or dull booming. Each patient had his personal vividly descriptive phrase. The noise varied considerably with posture: usually when lying down the noise reached its greatest intensity so that sleep was badly disturbed. Some patients complained that the symptoms became worse in the upright posture or upon turning the head to the side implicated. There was often a bilateral involvement so that subjective noises were heard as if coming from both ears. Some diminution of hearing was not uncommon.

The vestibular branch of the eighth nerve when implicated produced dizziness or even vertigo, with marked subjective symptoms of nausea, vomiting, past pointing and objectively demonstrable nystagmus. These symptoms are not to be confused with the transient dizzy spells on change of posture in persons with diffuse cerebral arteriosclerosis. In our patients the attack developed the intensity of a moderate labyrinthine disturbance, persisted with continuous disturbance for a few weeks and then completely or almost completely disappeared. Tests of labyrinthine function often showed a hyper-irritable labyrinth.

The *fifth or trigeminal* nerve has been involved only occasionally in our experience. We have seen no disturbance of the motor division but the sensory division has been implicated as manifested by pain in the face in one or all divi-

sions but usually the first division alone. The pain occurred within the distribution affected by tic douloureux but the severity was less and it was constant rather than paroxysmal. In one case objective decrease in sense of touch and pain was found over the facial area innervated by the fifth nerve.

We have not observed involvement of the olfactory, facial, glossopharyngeal, vagus, accessory or hypoglossal nerves. We have sometimes suspected that unilateral atrophy of the tongue might be due to pressure involvement of the hypoglossal nerve rather than to an intramedullary softening, but have no proof. It is possible that glossopharyngeal neuralgia and also trigeminal neuralgia may be due to vascular disturbances and thus belong to the category of disturbances herein described but as yet there is no definite evidence.

General Clinical Findings: The great majority of patients were diabetics but belonging to that group complicated by arteriosclerosis. Patients with no sign of diabetes have been seen with the same clinical syndrome. Signs of peripheral arteriosclerosis were usually present. Retinal arteriosclerosis with tortuous retinal vessels, nicking of veins by the hardened arteries and changes in the choroid or retina itself were frequent ophthalmoscopic findings. Hypertension and renal disturbances were sometimes observed in varying degrees.

Laboratory Findings: These were usually minimal. Roentgen-ray examinations revealed only occasionally a calcified internal carotid where involvement of the chiasm had been clinically noted. No other intracranial vessel has been visible. Spinal puncture revealed a clear fluid, often under slightly increased tension but normal in its constituents. Tests for blood cells and blood pigment were negative.

Clinical Course: In most cases the condition gradually improved and in a few weeks' time the disturbance entirely receded. There are exceptions to this statement. Some patients did not improve at all and remained permanently with diplopia and ptosis. In others recovery was only partial. Involvement of the optic chiasm and auditory nerves was often permanent. Vestibular and trigeminal disturbances usually completely receded whereas improvement in the function of the ocular nerves was variable.

Diagnosis: Several years ago we saw several

cases of oculomotor paralysis after a diagnosis of *epidemic encephalitis* had been made. No evidence of this disease could be found in our cases nor were the course and sequelae characteristic. *Diabetic neuritis* implicating the cranial nerves in a manner similar to diabetic peripheral neuritis may be considered but it is generally accepted that diabetic neuritis in elderly individuals is in reality an arteriosclerotic involvement of the peripheral nerves and that in younger individuals it is frequently due to avitaminosis. No concomitant symptoms of somatic nerve involvement have been observed by us. Furthermore, the syndromes described are found in non-diabetic arteriosclerotics. *Aneurysms* of the circle of Willis or its branches occur in younger individuals and implicate neighboring cranial nerves, especially those in the neighborhood of the internal carotid, middle cerebral and anterior communicating artery. These aneurysms produce focal signs referable to the second, third, fourth and sixth, as well as the sympathetic fibers, and frequently rupture to produce massive subarachnoid bleeding. These aneurysms are not arteriosclerotic but due to congenital atresias in the media and appear in young individuals without signs of cerebral arteriosclerosis.

Small amounts of bleeding from atheromatous plaques may possibly cause symptoms referable to various cranial nerves. However, we have never found gross or microscopic or chemical evidence of blood in the cerebrospinal fluid in our cases.

We feel that we are dealing with arteriosclerotic vessels which press upon and partially destroy or produce a temporary edema in the cranial nerves over which they pass. The nerve may be stretched or so compressed that many of its fibers are destroyed. The suddenness is probably due to the development of a new atheromatous plaque, a new degeneration of the media to form a small atheromatous excrescence. Winternitz, Thomas and Le Compte² have described changes in the vasa vasorum in arteriosclerosis resulting in infiltration, hemorrhage or thrombosis within the vessel wall. Any of these reactions may result in local gross increase in size of the blood vessel. The initial enlargement of the artery may recede due to organization and contraction or calcification, or the initial edema of the nerve recedes and the fibers accommodate

themselves to stretching. Certainly in not all cases is the lesion permanent.

Necropsy: In a few cases observation of the brain at postmortem has revealed an indentation of the third or sixth cranial nerves by sclerotic posterior cerebral and superior cerebellar arteries respectively. The gross indentations of the artery into the structure of the nerves was shown microscopically to have compressed many fibers and destroyed those in immediate contact.

In the literature no cognizance of arteriosclerotic involvement of the cranial nerves is taken except for certain special nerves. That the internal carotid and anterior cerebral arteries may cause lesions of the optic nerve and chiasm when arteriosclerotic or calcified is recognized in the ophthalmological literature.^{3, 4} Dandy⁵ maintains that paroxysmal vertigo and increasing deafness known as Meniere's syndrome is due to pressure on the eighth nerve and strangulation by an aberrant anterior inferior cerebellar artery. It has long been suspected that cerebral arteriosclerosis has something to do with the syndrome of trigeminal neuralgia. However, the most frequent occurrence of involvement of the third and sixth cranial nerves in cerebral arteriosclerosis has passed relatively unnoticed. Only Oppenheim⁶ stated that arteriosclerosis of the basal cerebral vessels can lead to a compression of the oculomotor nerves either directly or through tortuosity of the main artery in crushing and constriction of the nerves which lie over them. He described paralysis of the trochlear nerve associated with intermittent claudication. Grinker¹ called attention to involvement of the third, sixth and fifth cranial nerves in arteriosclerotics and hypothecated minute bleeding from atheromatous ulcers, but absence of signs of blood in the cerebrospinal fluid and later necropsy findings of direct pressure of arteriosclerotic vessels on the nerves without bleeding indicate that hemorrhage is not the mechanism at work.

The meager literature on arteriosclerotic pressure of cranial nerves within the skull does not reflect the frequency of the condition. Serious diagnoses such as encephalitis, tumor, cerebral hemorrhage or syphilis are usually considered in the presence of these various benign palsies. It is thus worth while understanding the typical arterial-cranial nerve relations although the basal arteries show many anomalies

in their size and course and there are many variations in the relations between the arteries and cranial nerves.

1. The *olfactory tract* and bulb lie above small branches of the anterior cerebral artery. Clinical disturbances of this nerve are unlikely, due to the small size of the arterial branches and the rich olfactory decussations.

2. The internal carotid artery lies lateral to the *optic nerve and chiasm*. Sclerotic and calcified arteries cause a nasal anopsia and when both carotids are calcified a binasal hemianopsia. The inferior medial surface of the nerve is pierced 12 mm. behind the bulb by the central ophthalmic artery, which with its vein is directed forward in the center of the nerve to the optic disc. Near the optic foramen the ophthalmic artery runs forward and medial and across the nerve but in the foramen the nerve is above and medial to the artery. Pressure from a sclerotic ophthalmic artery thus may cause atrophy and loss of vision in either lateral or medial portion of the visual field on one side, depending on the location of the sclerotic outpouching. The nerve just in front of the chiasm crosses over the anterior cerebral artery as it gives off the anterior communicating artery which may press upon the superior surface of the nerve. The anterior communicating artery and first part of the anterior cerebrals may in certain types of prefixed chiasms press against the chiasm, producing bizarre homonymous field defects.

3. The *oculomotor nerve*, after its origin at the anterior border of the pons, passes between the superior cerebellar and posterior cerebral arteries. Either vessel may compress the nerve. In the interpeduncular cistern the nerve passes on the lateral side of the posterior communicating artery, pierces the dura on the lateral side of the posterior clinoid process and runs in the wall of the cavernous sinus. It lies lateral to the most anterior curve of the carotid artery. This nerve thus may be compressed by several arteries and implicated in disease of the cavernous sinus.

4. The *trochlear nerve* winds around the cerebral peduncle and reaches the base of the brain between the posterior cerebral and superior cerebellar arteries. It reaches the wall of the cavernous sinus and lies beneath the third nerve. It has less opportunity than the third

for compression and is very infrequently involved.

5. The *trigeminal root* crosses the superior cerebellar artery obliquely and enters the gasserian ganglion. The ophthalmic ramus is lateral to the internal carotid artery and is separated from the vessel by the fourth and sixth nerves. The middle meningeal artery pierces the two roots of the auriculo-temporal nerve. Trigeminal implication by arterial pressure usually causes sensory irritation, especially in the first division, and occasionally numbness but no motor symptoms.

6. The abducens nerve lies above and crosses the vertebral, inferior anterior cerebellar, cerebellar superior and posterior cerebral arteries. Depending on its individual course it may cross below or above the posterior cerebral and superior cerebellar arteries. In the wall of the cavernous sinus it lies lateral to the carotid artery. The nerve is most commonly compressed by the posterior cerebral artery or involved in the wall of the sinus.

7. The *facial nerve* crosses the anterior inferior cerebellar artery. Clinical involvement due to arterial pressure has not been observed.

8. The *acoustic nerve* crosses the anterior inferior cerebellar artery which by pressure or strangulation may produce paroxysmal vertiginous attacks. More important, the nerve is accompanied by the internal auditory artery, disease of which is responsible for disturbances of the cochlear portion of the nerve manifested by pulsating tinnitus.

9-10. Twigs of the *glossopharyngeal nerve* cross the anterior inferior cerebellar artery ventrally and the *vagus* crosses it dorsally. No cases of compression of these nerves have been observed. Hypothetically glossopharyngeal neuralgia may be due to a loop of artery periodically irritating the nerve.

11-12. The *accessory nerve* crosses the posterior inferior cerebellar artery as does the hypoglossal nerve. The latter also runs near the vertebral artery. No known cases of implication of these nerves have been found.

SUMMARY

Syndromes consisting of disturbances of one or more cranial nerves in patients with cerebral arteriosclerosis may be due to compression of the nerves by sclerotic intracranial arteries. The

condition is benign and usually offers a good prognosis for recovery. The nerves most frequently involved are the optic, oculomotor, abducens, auditory and trigeminal. Specific contiguous relationships between nerves and arteries are described as the basis for the various syndromes.

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CHANCRES OF THE CERVIX

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With a widespread campaign now in progress educating the public against syphilis, most physicians have become alert to the fact that they are expected to make an early diagnosis of this condition. Many patients, male and female, today expect, and rightfully so, their physicians to make a correct and accurate diagnosis of any suspicious ulceration. Yet, despite all the means on hand for making this diagnosis, probably one of the most overlooked of these lesions is the chancre of the cervix.

Because of the relative inaccessible character of the parts and the uninitiated and uninquiring mental state of most of the victims, the woman seldom appears in the physician's office with a symptomless cervical lesion. Yet, chancres of the cervix are far more common than is generally realized. The fugitive character of the lesion is truly one of its striking characteristics and undoubtedly interferes with its identification. Stokes¹ states that "gynecologists seldom take the lesion into account and doubtless see a number of chancres a year under the guise of cervical erosions and vegetative lesions suggesting carcinoma and the like."

This brings us then to a consideration of genital lesions in women. It is a well known fact that the general belief is that primary

lesions of syphilis in the female are smaller than in the male. This is in accord with the findings of most syphilologists. As Stokes so aptly states "most typical lesions are seen on the labia majora, the most inconspicuous on the fourchette and at the portio. It is at times exceedingly difficult to decide whether a papular lesion on a lesser labium is a chancre or a papular secondary lesion since one finds the secondary manifestations in the woman confined almost entirely to the genitalia."

However, when we consider cervical lesions of primary syphilis, they are far from inconspicuous. These lesions are usually large ulcerated areas, that unless minutely examined, are readily mistaken for chronic cervicitis or carcinomata. The area is usually eroded or denuded and somehow does not tend to invade the external os. In other cases, cauliflower-like growths may be noted about the lesion and the examining physician will obviously jump to the conclusion that he is dealing with a carcinomatous growth.

Every cervical erosion should be looked upon with suspicion. Especially so, erosions of the cervical lips which are solitary and whose margins do not invade the external os. These lesions should all be regarded with extreme suspicion and every such case is worthy of a dark field microscopic examination.

It is a well known fact that during this early chancre stage, the blood Kahn and Wassermann or both may be negative. As Stokes so aptly puts it "one-fifth to one-half of the syphilis which an average clinician sees will present itself with negative Wassermann credentials." It is therefore highly essential that every physician be rather guided by the positive dark field examination or definite clinical evidence.

A chancre of the cervix has no definite symptomatology. As already stated, the cervical lesion of syphilis may be entirely symptomless in which case the patient may never even realize her plight and of course by the time she does seek medical advice, the primary lesion will have probably disappeared. However, occasionally such a symptomless lesion may be recognized during a routine examination. Women in the last two decades have become "cancer conscious" and a large number are regularly seeking periodic genital checkup. During such an examination, it is the duty of the physician to make a

definite diagnosis of any suspicious ulceration he might observe.

One of the first symptoms that may be encountered in a cervical lesion is bleeding or spotting. In a large ulcerated area the denuded surface may bleed quite freely. It is not at all far fetched to state that the patient may come into the office complaining of a prolonged profuse menstruation. The writer recently saw just such a case.

A young woman, 25 years of age, came to the office complaining of vaginal bleeding of three weeks' duration. She had consulted another physician who had made a diagnosis of early cancer and had advised pan-hysterectomy. Not satisfied, the patient sought further advice. Vaginal examination revealed a large ulcerated cervical lesion to one side of the external os which was bordered by a small cauliflower-like growth. The patient had been rapidly losing weight, feeling tired continually and showing signs of a marked anemia. The symptoms having been of three weeks' duration, a Kahn test was run and returned negative. Immediately thereafter, a dark field examination was made from the serous material scraped off the lesion. The field was flooded with spirochetes. Yet despite this, further Kahn tests continued negative. However the response to neoarsphenamine was miraculous. The vaginal bleeding ceased, the lesion healed rapidly and the patient began regaining her strength and weight almost from the onset.

However, such is not always the good fortune for the patient. The writer in the past few months had the occasion to see a woman of 50 years, who after over ten years of treatment by some ten different physicians, had been going about with an untreated case of syphilis. When we saw the patient, the diagnosis of tabes dorsalis was already obvious. She had every neurological sign and symptom and was a textbook picture of the disease. Diagnosis was made immediately from the clinical observations and of course the serology confirmed the diagnosis.

This patient likewise had been diagnosed as a case of carcinomata and had at one time even been operated upon for a metastatic carcinoma of the stomach. At surgery at the Illinois Research Hospital in Chicago, no organic cause for obstruction could be found although she had been diagnosed as carcinoma of the stomach with obstruction. She continued untreated until she reached the tabetic state—a woman of 50 who at the onset of therapy could easily have been mistaken for 70 years of age—a helpless cripple.

SUMMARY AND CONCLUSIONS

1. A negative serology in cases with sus-

picious cervical lesions does not rule out a cervical chancre.

2. Every cervical erosion should be looked upon with suspicion. Especially so, erosions of the cervical lips which are solitary and whose margins do not invade the external os. All such cases should receive a dark field examination for spirochetes.

3. Be suspicious of any erosion of the cervix where the complaint may be of bleeding or spotting. It is not far fetched to get prolonged and profuse bleeding from a chancre.

4. A cauliflower-like growth bordering on an ulcerated area is not always a carcinoma. First rule out a cervical chancre.

5. Early diagnosis of chancre of the cervix will save many women from reaching middle life as helpless crippled tabetics. Early diagnosis of syphilis can be made and should be the object of every practicing physician.

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ROLE OF VITAMINS IN OPHTHALMOLOGY

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Great interest has been taken in the last few years both in the research and clinical fields in the diseases caused by specific vitamin deficiencies. The public has also become vitamin minded instituting this type of therapy voluntarily and freely. Specially planned deficient diets can be fed to animals, and the definite pathologic changes noted. Similar changes are found in man in times of economic strain and in poorer groups of people as in China. Although typical cases of dietary deficiency are few in the United States it is now assumed that milder forms of vitamin deficiencies are more prevalent than previously thought, particularly as a complicating factor in other disease. It is important to remember that when intake of food is restricted or when there is interference with its absorption and utilization a vitamin deficiency may result.

VITAMIN A

Early Egyptian literature and the teachings

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of Hippocrates are quoted as prescribing liver for hemeralopia, one of the symptoms of avitaminosis. Absence of vitamin A occurred in large epidemics in Russia during the Lenten season of 1887, Japan in 1896 and Denmark 1917. From the time of the discovery of vitamin A until 1934 only four cases of xerophthalmia in adults had been reported in the literature and at this time a fifth was reported by Thorson.²⁰ A formal inquiry carried out among leading eye specialists in 1933 showed that xerophthalmia was of rare occurrence and that night blindness was even more exceptional.⁸ From this report there was no indication that there had been any increase during the depression.

Nearly all observers agree according to Mackay¹⁵ that young children develop symptoms of vitamin A deficiency more readily than adults. In her work with children in London in the last twelve years she has seen no case of keratomalacia and only one of xerosis of the conjunctiva. She believes that although poverty is present the standard of living and care of infants has improved sufficiently in the last 25 years so that gross vitamin A deficiency as evidenced by keratomalacia is a rare condition.

In contrast to this is a study by Sweet and K'ang¹⁸ of 203 Chinese patients. The Chinese diet supplies sufficient caloric and adequate B and C but contains suboptimal A and D and is deficient in calcium and phosphorus. Keratomalacia or xerophthalmia was a prominent feature of each case, therefore, a lack of vitamin A was considered the underlying cause of deficiency symptoms. These writers as well as Blegvard and others found the largest group of patients suffering from these conditions under five years of age. Another large group fell in the 15-30 year period; it consisted of soldiers and the extremely poor laborers working long hours with inadequate food. The seasonal incidence of this group was interesting. The occurrence of the lesions was greatest in Jan. Feb., and March, and July, the first group the winter months when lack of fresh vegetables is acute in Peiping and the summer months with the greatest incidence of diarrhea.

Deficiency of vitamin A effects primarily the epithelial tissues which become replaced by keratinized stratified squamous epithelium. Early microscopic changes in the normal epithelium of the respiratory tract, genito-urinary tract,

conjunctivae, cornea and paraocular glands. In the eye Bitots spots are the first to appear and are whitish or yellowish foamlike spots on the bulbar conjunctiva looking as though they would brush off with closure of the lids but do not. Ten to fifteen days later dryness of the conjunctiva is noted in irregular patches with shrinking or wrinkling and loss of luster of the scleral conjunctiva. The paraocular glands become clogged with keratinized cells. The lid margins may become glued. Later the cornea loses its luster, is hazy, dull and dry, and loses its normal sensitivity. If the condition is progressive it becomes greyish and then necrotic. Due to the breaking down of the normal barrier to infection the eye becomes secondarily involved by invading organism. Corneal ulcers develop, become penetrating and panophthalmitis results in the complete destruction of the eye. It is well to stress here the concept that vitamin A is not the protective substance against infections but that its lack causes a breakdown in the normal cellular protective structure against invaders.⁵

If the warning symptom of night blindness is missed as it would be in young children there is no obvious signal until the eye becomes grossly involved. Pain, lacrimation, redness of the eye and photophobia suddenly develop together. Conjunctival discharge becomes increased. Failure of vision is rapid. The cornea becomes involved. In the Chinese patients it was found that the ocular involvement to total blindness would be completed in a few hours or days. The ocular symptoms may occur early or late as a manifestation of vitamin deficiency. The other symptoms for findings associated with the ocular condition are not considered here.

The ocular complications were secondary to infections of the respiratory tract in this group. Late keratomalacia regularly produces corneal ulcers with perforation; prolapse of the iris and panophthalmitis in the late cases.

Scrapings of the conjunctiva made by sweeping a scalpel across the conjunctiva will show keratinizing epithelial cells. This is one of the most reliable tests early in ocular involvement.

Most observers agree that these changes are late manifestations of the deficiency. Hemeralopia, night blindness, is considered the most constant early sign according to Jegher¹² and exists a long time before other deficiency signs

appear. Outstanding cases of hemeralopia as reported by ophthalmologists are rare. Only now is it being appreciated that a mild or moderate degree of night blindness may be present and interfere with efficient dark adaptation and visual acuity in dim illumination. Jeans and Zentmire⁹ using the biophometer test reported forty-five cases of probable mild deficiency among a group of 213 children. In a later paper¹⁰ they found 26-75% of the children of different social groups with evidence of A insufficiency. Parks found about the same percentage in adults and Zegher in about 10-50% of adults.

Frandsen⁶ found the symptoms most pronounced in women at puberty and the menopause. In the various age group, both sexes and different economic levels there was a wide range in the degree of hemeralopia present. She found great similarity between the clinical picture of mild hemeralopia and neurasthenia and hysteria. All three symptom complexes are characterized by poor visual acuity without a definite error of refraction and with photophobia, "glare blindness," after images, muscae volitantes, reversal of the color fields and reduction in the field of vision which increases as the patient becomes tired.

Yudkin²⁴ in the last issue of the Archives of Ophthalmology suggests that the same fundamental disturbance of the retina is present in all the conditions and that it may not necessarily be a vitamin deficiency.

This type of night blindness without demonstrable changes in the eye has been termed essential hemeralopia. The examiner always must exclude by a careful and thorough eye examination hemeralopia which may be due to changes in the light refractive apparatus of the eye or the light perceptive apparatus. In the first group are affections of the cornea anterior, chamber lens and vitreous and in the second retinitis, choroiditis, retinitis pigmentosa, detachment of the retina, optic atrophy, optic neuritis and numerous other specific eye conditions.

Various means of determining poor dark adaptation have been used as visual field determination in reduced illumination; visual acuity in reduced illumination; examination of distinction of power and minimum light visible determination. The Birsch Hirschfield photometer and

biophotometers used by Jegher and Jean and Zintmeyer are of the last type.

Since visual purple is synthesized from vitamin A and regenerated from body stores when depleted, alternate periods of bleaching and dark adaptation will alter the visual purple and the vitamin A content of the retina. The minimum light visible in the two periods is determined in millifoot candles. From the ability of the eye to adapt to darkness it is determined whether a vitamin A deficiency is present in the individual.

At present there is considerable enthusiasm for this method and results indicate a much higher incidence of vitamin deficiency than presumed present in this country. The method and apparatus have been criticized in a recent Public Health Bulletin¹⁷ and it is considered an unreliable method of determination of vitamin deficiency. Norms have not been established nor have findings been correlated with chemical studies of vitamin A in the blood.

All workers using the photometer test note the readings before and after periods of vitamin injection. The recovery period varied from a few days to six weeks. Intramuscular injection of 40,000 Int., units brought return to normal in 7-10 minutes according to Jegher.¹² He concluded that 5,000 to 10,000 U. S. P., units of vitamin A whether taken in cod liver oil or vitamin A concentration carotene will abolish all subjective and objective evidence of vitamin A deficiency even if the diet remains inadequate. Greater dosages are needed if anything hinders absorption or metabolic needs are increased. If doses of carotene are pushed above 10,000 U. S. P., daily an occasional case of carotemia develops.

This light adaptation problem or early vitamin A deficiency has its practical application in problems of night driving and aviation.¹¹ Considerable work is being done on these problems at present, but until an accurate test is developed this true relationship to vitamin A deficiency cannot be determined.

Perhaps it is best to leave this controversial subject and tell of eye conditions in which vitamin A has been found to be of distinct benefit. A well-balanced diet with the addition of cod liver oil brings about rapid healing in individuals with phlyctenular keratoconjunctivitis. Atropine usually is given as well but Yudkin²⁴

believes specific ocular therapy is not necessary. Patients with interstitial keratitis improve more rapidly when vitamins are given in addition to the specific therapy. Infants and children with non-specific corneal lesions are treated with vitamin A with improvement. Young adults are frequently examined who have faint corneal scars impairing vision with a history of eye trouble as an infant or young child. In all probability these were due to dietary deficiencies of vitamin A.

Yudkin has noted similar corneal lesions in adults from 45-68 years of age. They have no signs of infection but complain of general malaise, loss of appetite, constipation, foreign body sensation and photophobia. Invariably these patients had lost their teeth in early adult life. There was breaking down of the cornea in the lower exposed portion with staining with fluorescein, but little congestion. Local treatment was of little avail. Often the condition is called catarrhal ulcer. In spite of all local treatment the condition persists and becomes progressively worse. Some patients responded to cod liver oil and others did not. The most likely cause was failure of absorption of the vitamin in the intestinal tract. Large quantities of vitamin B complex were given in addition with disappearance of the ocular lesion.

Tai¹⁹ in China has had very excellent results in phlyctenular conjunctivitis, keratoconjunctivitis hordeolum and keratomalacia with hypodermic injections of carotene.

Since the neuro-epithelium is destroyed in retinitis pigmentosa it is impossible to improve the retina with intensive vitamin therapy. The general health of the patient is definitely benefited and psychological effect is beneficial. Whether intensive vitamin therapy would prevent the advance of the condition when diagnosed early is not known.

Chorioretinal disturbances from local infections have been aided by vitamin A therapy, but most likely through improving the general condition, and not through any specific effect on the retina alone.

VITAMIN B

In experimental work it has been found that there are at least seven factors in the B complex which are essential for normal animal existence. Clinically B₁, the antineuritic and B₂ or G the anti pellagra vitamin, are important.

Vitamin B plays an important part in carbohydrate metabolism and promotes gastrointestinal function. It has been suggested that B₁ be used with A since it might improve the absorption of A in deficiency conditions.

Alcoholic neuritis has been considered a deficiency disease due to faulty digestion because of the destruction of digestive enzymes and failure of absorption of vitamin B. Toxic amblyopia which produces central scotoma due to damage of the macular bundle is recently being considered a type of alcoholic neuritis due to deficiency of this vitamin. Carroll²³ of New York has treated eight patients with this condition by giving a high vitamin diet together with the continuation of intake of tobacco and alcohol which amounted to as high as a quart of whiskey a day. All but one patient recovered satisfactory vision for reading and distance. His theory is that patients suffering from subclinical nutritional deficiency have a markedly increased susceptibility to tobacco and alcohol. This problem is still in the stage of clinical research.

Vitamin B₂ is essential to growth and normal nutrition. Lack of this vitamin causes digestive disturbances, nervous depression (different from the symmetrical polyneuritis of B₁); general weakness and the skin lesions typical of pellagra. Several workers in this country¹⁴ and Moore¹⁶ in England have reported a retrobulbar optic neuritis in typical cases of pellagra. Failing vision and photophobia were noted first even before the general symptoms. If untreated this progressed until only hand movements could be seen. The discs became pale particularly on the temporal side and in severe cases the discs appear typically that of a primary optic atrophy. Total blindness rarely resulted if treatment was instituted even late in the disease. Moore found that the condition responded well to yeast, but not to cod liver oil or fruit juices.

Keefer¹³ has reported cases of optic neuritis occurring in lactating women which he attributed to deficiency of vitamin B₂.

Experimental work by Day, Langston and O'Brien⁴ have shown that cataracts develop in rats maintained on a vitamin B₂ deficient diet. This has been confirmed by other workers but as yet no clinical research from this angle has been reported.

VITAMIN C

Vitamin C is essential for the formation of

an intercellular cement substance between the endothelial cells. Capillary fragility with the tendency for hemorrhage results. Yudkin²⁴ has treated many types of hemorrhagic retinitis with cevitic acid and believes that the period of absorption is shortened. In his study lemon juice proved much more effective than the synthetic vitamin, and he considered four to five lemons a day necessary. He agrees with other workers that there is probably some other factor in the fruit juice besides the vitamin which is an effective agent.

Dr. Lane in a personal communication reported improvement in a patient with trachoma who had accidentally gotten lemon juice in his eyes. The patient voluntarily continued this type of treatment and the improvement was noted when he next reported to the clinic. Experimental work is now being conducted using cevitic acid as therapy. No reports as to results have been published as yet.

It is known that there is a considerable quantity of vitamin C in the lens and that in the cataractous lens it is markedly reduced. Nothing is known with certainty regarding the function of vitamin C in the metabolism of the lens. The relation of C to the formation of cataract is problematic and no report of cataract in a patient with scurvy has been reported. Yudkin advises his patients with early lenticular changes to take the juice of one lemon before breakfast and dinner as well as vitamin B twice daily with a well-balanced diet as to calories and food content. He is satisfied that early lens damage is repaired by this procedure.

VITAMIN D

Animal experimentation has shown that corneal changes¹—thinning of the epithelium, edema of the stroma, reduplication of the endothelium and ectasia—result from lack of vitamin D in the diet. To date, no clinical studies relating to vitamin D deficiency and corneal lesions have been made. Some workers associate the formation of cataracts to lack of this element in the diet. Yudkin feels that a granular conjunctivitis is provoked in children by giving products high in vitamin D supplemental by exposure to the sun or artificial sun rays. There is no doubt that cod liver oil is beneficial to the general well being of the patient, but just

what part vitamin D plays in the healing of specific eye conditions is not known.

No relation of vitamin E to pathological changes in the eye has been reported.

CONCLUSION

From extensive clinical and experimental investigation vitamins have been found to be important in the normal physiology of the eye and as therapeutic measures in pathologic conditions of the eye. Vitamin A is essential for the normal function of the retina and is useful in corneal and chorioretinal conditions. Vitamin B more recently is being used in the treatment of toxic amblyopia from alcohol and tobacco, and optic neuritis. Vitamin C may be used in recurrent hemorrhages in any of the eye tissues. Vitamin D has no specific use in eye therapy but is helpful in building up the patient's general condition. No use of vitamin E in ophthalmology had been noted as yet.

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CESAREAN SECTION

An Analysis and a Discussion

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The series of cesarean sections herein analyzed comprise all those performed at the University Hospitals of St. Louis University to January 1, 1938. These hospitals are respectively St. Mary's and the Firmin Desloge. The former, opened in 1924, is, for all practical purposes, in the nature of a general and more or less open staff hospital catering exclusively to private patients, while the latter, opened in 1934, is a closed staff hospital catering chiefly to the clinic type of patient with services limited in accordance with strict specialization. It is important that this differentiation be kept in mind for it means that insofar as *St. Mary's* is concerned the present obstetrical teaching staff of St. Louis University *had and has* no control whatever over the conduct of any but its own private patients. These furthermore, constitute by far the minority of the entire St. Mary's series since the present staff was not appointed until 1934 and because even now physicians other than members of the obstetrical teaching staff may perform cesarean sections at this hospital. Indeed one of the purposes of this presentation is to com-

pare the St. Mary's with the Firmin Desloge cases with this as a background and accordingly the combined series will be separated into its two separate components when necessary for this purpose.

Out of 7,947 deliveries at St. Mary's there were 149 sections with eight maternal deaths, six stillbirths and nine neonatal deaths while out of 1,780 deliveries at the Firmin Desloge there were 34 sections with one maternal death, no stillbirths, and only one neonatal death. The eight maternal deaths at St. Mary's were due to peritonitis in three cases, to toxemia in four, and to postoperative hemorrhage in one. The single death in the Desloge series cannot be considered a section death since it was due to cardiac decompensation in a patient who had been bed-ridden for months. If we include the outpatient deliveries with the Desloge series the incidence of section is 1.14% with a zero section mortality compared with an incidence of 2% and a 5.3% section mortality at St. Mary's. Two of the stillbirths should be excluded since they were twins delivered by vaginal section at the fifth month of pregnancy through an apparent error of diagnosis involving also the estimated date of confinement. The nine neonatal deaths were due to prematurity in four instances, to hydrocephaly in two, to cerebral hemorrhage in one and of undetermined cause in the others. The single neonatal death in the Desloge section series was due to an hemorrhagic diathesis. That section was performed for hydrocephaly is no doubt explained by the fact that for religious reasons no destructive operation could be practiced upon a living fetus.

There were 98 primiparae and 48 multiparae at St. Mary's (the parity in two cases being unknown) compared with 18 primiparae and 16 multiparae at the Desloge. The much greater incidence of primiparae at St. Mary's indicates perhaps a more willing and often needless resort to section on such patients in private practice. Of the combined total of 183 sections 91 were elective and 92 were done after the onset of labor.

A postoperative temperature which may reach 102° F. in the immediate postoperative period but which does not reach 101° F. after the third postoperative day was considered normal because of the frequency with which it occurs without specific cause in an otherwise normal

recovery from laparotomy of any sort. Eleven out of 42 elective classical sections had postoperative temperatures higher than this standard compared with 15 out of 41 elective low cervical sections and one out of six elective modified classical cases. Fourteen out of 36 classical sections done after the onset of labor were febrile compared with 21 out of 53 low cervicals done at this time. The single modified classical section done after the onset of labor was febrile for four days.

Excluding those cases in which the postoperative fever represented merely the final accompaniment of a severe toxemic process as well as those in which it was of unknown origin and without influence on an otherwise normal recovery or in which it was due to causes in no way attributable to the operation we found that recovery was marred by specific febrile complications in three out of 42 elective classical cases, in four out of 41 elective low cervical cases, in ten out of 36 classical sections done after the onset of labor, in ten out of 53 low cervicals done at this time and in none of the seven modified classical cases. The complications in the elective classical group consisted of two cases of peritonitis eventuating in death and one case of infection of the abdominal incision. Those in the elective low cervical group comprised two cases of infected incision, one of low grade endometritis, and one of thrombophlebitis and infection of the abdominal incision. In the group of classical sections done after the onset of labor there was one case of peritonitis eventuating in death in a patient subjected to an attempted forceps delivery prior to hospital admission, seven cases of low grade endometritis and one case each of aspiration pneumonia and infection of the abdominal incision. In the low cervical group done after the onset of labor there were four instances of infection of the abdominal incision, two of thrombophlebitis, two of low grade endometritis and two of cystitis secondary to accidental incision of the bladder. Two vaginal cesarean and two Porro sections were done (all at St. Mary's and prior to 1934), one of the latter patients dying of postoperative hemorrhage two hours later.

As for the total deaths (eight) in relation to the type of operation performed there were two Porro sections with one death due to hemorrhage, 70 classical sections with three deaths due to

peritonitis and one due to toxemia, and 74 low cervicals with three deaths all due to toxemia. *These figures apply exclusively to St. Mary's since there were no section deaths at the Desloge.*

Thirty per cent. of the cases in which the membranes were intact at the time of operation had postoperative fever compared with 47% of the cases in which the membranes had ruptured. The membranes, however, were intact in 11 of the 18 patients presenting the most severe postoperative infections including two deaths from peritonitis in patients upon whom section was done electively. In searching for an explanation of the origin of the infection in these cases it seems necessary to consider possible application of the writer's view that rapid extraction of the child through a tightly fitting uterine incision creates a suction which draws into the uterus and the adjacent operative field such vaginal discharges as are in contact with the cervix. We should, at any rate, no more contemplate doing cesarean section without preliminary vaginal preparation than we would do complete hysterectomy without such preparation.

Excluding the vaginal cesarean sections some form of internal manipulation was carried out prior to operation in 29 cases. This included merely vaginal examination in 14, artificial rupture of the membranes in five, packing of the vagina in two, bag induction in two, preceded in one by artificial rupture of the membranes, attempted forceps in three, manual dilatation and attempted forceps in one, attempted forceps and version in one, and rupture of the membranes and attempted forceps in another. Among ten patients upon whom vaginal examination was done only after hospital admission, and in whom the membranes were intact, we find that three of the six who were in labor presented postoperative fever higher than our chosen standard as compared with one of four who were not in labor. This suggests that the state of labor itself has more to do with the incidence of puerperal morbidity than has the performance of a vaginal examination. Four of five cases in which labor was induced by rupture of the membranes prior to section had an uneventful postoperative course; the average length of time which elapsed between rupture of the membranes and operation being sixteen hours, the longest thirty-six hours, and the shortest two hours. The fifth case, namely the one in which labor

failed to occur within 72 hours after rupture of the membranes, died of hemorrhage two hours after a Porro section. Packing of the vagina and cervix because of hemorrhage was carried out in the hospital immediately prior to section in one case while in another a considerable amount of cotton was inserted into the vagina by the patient herself shortly before admission and several hours before section. The membranes were intact in both cases. The former patient made an entirely uneventful recovery but the latter presented a febrile postoperative course attributed to infection of the abdominal incision. The one patient in whom bag induction of labor was done prior to section made an uneventful recovery as did also the patient in whom both bag induction and induction by rupture of the membranes was attempted. Five of the six cases in which delivery by forceps had been unsuccessful and whose entire labor was conducted in the hospital made an uneventful recovery. Four of these attempts were at St. Mary's and one at the Firmin Desloge. The sixth case, namely, the one in which forceps delivery had been attempted in the patient's home prior to admission to St. Mary's, died of a postoperative peritonitis. The single case in the Desloge series was a private patient of one of the less active members of the staff. Although the outcome in these cases was all that could be desired, provided these manipulations were done exclusively after hospital admission, it would be a tragedy if this were to promote a sense of security for similar undertakings since this would undoubtedly prove to be false. At all events they represent an initial error of judgment.

Rubber tissue drainage of the abdomen through the abdominal incision was carried out in only seven cases but its routine employment when section is performed after the onset of labor is earnestly recommended.

When infection is present prior to delivery the chances for its further spread must be greater if the patient is subjected to the added manipulation and traumatism of cesarean section than would be the case if it were possible to effect delivery from below. This seemingly superfluous statement seems worth making because the high praise of the low cervical as compared with the classical operation has, not only in this, but in other instances, often given an un-

due sense of security leading to its performance as the easiest way out of a situation that might better have been handled in another way.

Insofar as the elective low cervical cesarean section is concerned it must be obvious that a typical low cervical operation with longitudinal incision cannot be done before the onset of labor since the cervix has not retracted nor has the lower uterine segment been definitely formed. In elective cases the writer therefore prefers to do a modified classical type of operation which in them possesses advantages of the so-called low cervical operation in addition to some of its own. The uterine incision is made upward from the point of attachment of the vesico-uterine fold which is not incised until after delivery of the child and closure of the uterus when it is freed and resutured over the uterine incision. Thus the incision is extraperitonealized, and the operation is confined to the lower abdomen and pelvis just as effectively as in the so-called elective low cervical operation in which, before the onset of labor, we are actually making our incision in the lower part of the body of the uterus just as surely as in the operation described. Its advantages are that the child can be extracted much sooner after commencement of the operation than when separation of the bladder must first be effected, and that the extraction is by the child's feet which lessens the likelihood of its aspiration of blood and amniotic fluid, and which, from the mother's standpoint, entails less manipulation in the area most accessible to vaginal contamination.

The writer's total contribution to the combined series consists of seven cases, all having been of the modified classical variety and all having had a vaginal instillation of one per cent. neutral acriflavine in glycerine prior to operation. All but one were elective and all but one had an uneventful postoperative course, the single exception having been febrile for four days without demonstrable cause.

Any series of sections occurring in a general private hospital will reveal cases in which no adequate indication existed as well as others in which the assigned indication was either invalid in itself or was rendered so by particular circumstances.

That the St. Mary's series is no exception is indicated by the fact that only 50% of the sections in the St. Mary's series were done for dis-

proportion or for causes contributing thereto or resulting therefrom as against 75% done for this reason at the Desloge. It should furthermore be recalled that the incidence of primiparae was twice that of multiparae in the St. Mary's series whereas there was but little difference in the incidence of primiparae and multiparae in the Desloge sections. Our study of St. Mary's records indicates that the incidence of section could without detriment to mother or child have been reduced to a point corresponding with that at the Firmin Desloge. While there were instances in which section should have been done but was not, this applies as much to St. Mary's as to the Desloge and their number is not nearly sufficient to raise the 1.1% Desloge incidence as much as the 2% St. Mary's incidence might properly have been reduced.

There can be no doubt that the total maternal and fetal mortality attending cesarean section is directly related to the total number of sections done, that excepting certain isolated and very favorable statistics from a few specialized institutions this mortality is still far too high and finally that mortality figures do not tell the entire story. Still to be considered is the high morbidity, the danger of rupture in a later pregnancy, and finally the patient's emotional reaction to future pregnancies.

While past efforts to bring about an improvement in section statistics have centered chiefly on the development of a safer operative technique, it is our firm conviction that in the future more emphasis will have to be placed on bringing about a proper reduction in the total number of sections done as well as on earlier and more accurate recognition of cases which truly need the operation. This entails a greater dissemination of knowledge concerning the physiology and pathology of labor and the standardization so far as possible of indications and contraindications.

The following remarks are occasioned in each instance by the discovery among some of the St. Mary's records that certain so-called generally accepted facts pertaining to indications are not so generally accepted or understood as might be supposed. I trust that they may be interpreted, not in the light of carrying coals to Newcastle, but as an effort to show some of the points on which we as specialists and teachers must place emphasis if we are to promote better obstetric practice.

Often a contracted pelvis is stated to be the indication for section when either no pelvic measurements whatever are noted, when only external measurements are recorded or when such measurements as are noted are actually normal. At other times the validity of pelvic contraction as an indication for section is destroyed by the fact that the child is so small that the pelvis is no obstacle. One should therefore always estimate also the size of the child and think in terms of cephalopelvic relationships rather than in terms of pelvic measurements exclusively. It should not be overlooked that pelves associated with leg or hip joint deformities may present a transverse contraction of the pelvic inlet despite normality of all other measurements, and detectable only by x-ray pelvimetry.

Although an unrecognized insuperable disproportion is of far more serious consequence in breech than in vertex presentations, fear of this fact should not lead to the indiscriminate employment of cesarean section in these circumstances since it is also true that an aftercoming head negotiates the pelvis more easily than an oncoming head of equal size. We should rather be more than usually painstaking in our estimation of fetal and pelvic size, and to this end should not overlook the value of abdominal examination in reference to the fetus, and of x-ray pelvimetry when ordinary pelvimetric measurements reveal any abnormality whatever. A warning should be sounded against drawing any conclusions as to fetal size from simple flat pictures of the patient's abdomen since they carry with them no mechanism for correcting the enlargement and distortion of the cephalic image which varies with the position of the head in relation to the target and plate and with its attitude. It is especially in breech presentations that erroneous impressions of an unusually large head may be obtained since here the head lies nearer the target and therefore throws a larger shadow than in cephalic presentations.

Cases of dystocia occurring after engagement of the head, with the cervix partly dilated, though with membranes still intact and assumed to be due to a moderately large child, undoubtedly present other factors of which the intact membranes may be one and primiparous soft tissue resistance or malposition alone or in combination, another. While it may be impossible to carry out a test of labor in accordance with

its defined requirement, namely, observation of the progress of labor for two hours *after* complete dilatation with ruptured membranes, since the attainment of complete dilatation may be delayed beyond the point of safety of the lower uterine segment or of exhaustion of the patient, one cannot claim to have given these cases even a fair partial test of labor as long as the membranes remain intact. With the head engaged and the danger of cord prolapse thus removed artificial rupture of the membranes should be without danger to the child. Nor should it be a contraindication to possible subsequent section provided it is done only in the delivery room after careful preparation and with aseptic or antiseptic aftercare, and provided furthermore, that it is done only in cases in which the head is well engaged, the cervix partly dilated and that too long a time is not allowed to elapse before performing section should it become apparent that this procedure has failed to improve the progress of labor. When the presenting part is in the pelvis and the cervix partly dilated, membranes that are tightly drawn over the child's head with little or no intervening fluid tend to become a hindrance to progress in that they are often so inelastic and so intimately adherent as to interfere with cervical dilatation and retraction.

The conditions of the membranes, however, present an entirely different aspect in cases in which with moderate disproportion and little or no dilatation the head is still floating at the inlet. Here their premature rupture is much to be deplored since these are about the only cases in which the hydrostatic dilating action of the bag of waters would otherwise come into play in pure form and in which it would be so helpful in dilatation and in overcoming a disproportion not necessarily insurmountable in itself but one adversely affected by this occurrence. While in these cases an intact bag of waters ordinarily supplants the presenting part as an object over which the cervix can be stretched, its premature rupture leaves dilatation to be effected exclusively by the process of retraction rather than by a combination of stretching and retraction until such time as the head may become fixed. Engagement is in turn interfered with by reason of the fact that as long as the cervix is not completely dilated and retracted the disproportion is intensified by the intervention of this

tissue. If engagement occurs before cervical dilatation has been completed the cervix may be caught between the head and the pelvic inlet, interfering with further dilatation. Thus a vicious circle is set up and a disproportion which might have been overcome under favorable circumstances becomes insurmountable. These facts are mentioned only because the dystocia occurring in either of these two types of cases is often mistakenly attributed to cervical rigidity. The only type of case in which dystocia could with assurance be considered to be of cervical origin is one in which disproportion and malposition could be ruled out and in which dilatation fails to occur despite good contractions and ruptured membranes.

In many instances it may be advisable to do a vaginal examination before abandoning a test of labor once such a test has been initiated. When carried out in the delivery room under aseptic conditions and after careful vaginal preparation it entails little if any added risk as compared to rectal examination, whereas its freedom from the inaccuracies which frequently characterize the latter, places decisions as to the continuance of labor or its interruption by section on a much firmer foundation. This procedure is indeed necessary in those cases in which we wish to secure a more adequate test of labor by observing the effects of artificial rupture of the membranes. Furthermore, there may be unexpected complications during the course of ordinary labor which by causing fetal distress would make prompt termination of labor desirable in the interests of the child. Since these interests constitute the main reason for possible interference, it is obvious that our choice of procedure or even the question of interfering at all will be influenced by a two-fold time consideration, namely, how long the child may endure the particular cause of its distress and how much time will be required to carry out any one of perhaps several methods of delivery. Since the latter depends among other things on absolutely accurate knowledge of the degree of dilatation, it is suggested that a vaginal examination be done whenever rectal examination is apt to be fallible as, for example, in breech or transverse presentations or cases complicated by prolapse of the small parts. Not only may conditions be found which would permit of vaginal delivery in much less time than required to prepare for section,

but the latter itself may be too great to be of value. It is wrong to subject a patient to operation on a diagnosis arrived at by what is *often* guesswork or near guesswork when other equally safe and more accurate methods of diagnosis are available, since successful treatment is more dependent on accurate diagnosis and proper judgment than upon technical skill.

When, in the absence of disproportion, premature termination of pregnancy is necessary, the method whereby this is accomplished, whether by induction of labor or by cesarean section will depend on the gravity of the particular case at hand. Attempts to induce labor, when indicated, may well begin with medical induction but failure in this is in itself no reason to abandon the attempt and resort to section unless there is reason to fear that labor may be complicated by a dystocia the outcome of which cannot be foretold.

Low reserve kidney does not present an emergency and does not of itself call for cesarean section though it may call for premature termination of pregnancy by induction of labor. The same is true for most preeclampsias though section is advisable for the immediate termination of pregnancy in severe cases and those rapidly becoming so. While there is considerable difference of opinion as to whether eclampsia with convulsions is a valid indication for section it would at least seem advisable to institute measures designed to bring the convulsions under control before undertaking the operation. When in addition convulsions do not occur until *after* the onset of labor the justification for cesarean section diminishes as the progress of labor advances. To terminate by section a labor that has been progressing satisfactorily merely because of the supervention of convulsions is to add a different type of strain out of all proportion to the benefits of a slight additional shortening of labor. It is particularly futile to resort to section or any rapid means of terminating the pregnancy after intrauterine fetal death has occurred, since in such cases nature has accomplished about the same object as that which would underlie these undertakings.

Cesarean section is proper in cases of central placenta previa as well as in those of partial previa in which there is reason to believe that the progress of labor will be slow, but it is unwarranted in marginal placenta previa and well

high inexcusable when in addition cervical dilatation is far advanced and there is no complicating disproportion.

Transverse presentation is in itself not a valid indication for *elective* section the necessity for which, in this instance, will depend entirely on what has caused the malpresentation. Thus if it is the result of disproportion or displacement by tumors these factors should be considered the indication, rather than the malpresentation which they have produced and which here is but a secondary consideration. At other times the malpresentation may be the result of factors which in themselves present no obstacle to delivery through the natural passages and in these instances there is a tendency to spontaneous correction with the onset of labor.

The history of previous difficult labors is also in itself not a valid indication for section and it is rather the condition that caused them which should be so considered and then only if it was of such nature as to be permanent or recurring in character. In the present day when forceps are so frequently used merely to lift the head out of the vagina once it has reached the pelvic floor, grave error may result from regarding the history of previous forceps deliveries either too lightly or too seriously. Here as elsewhere treatment should be based more upon the results of a careful examination than upon a history which is often misleading as to the cause of possible previous mishaps.

What has been said concerning the history of previous difficult labors applies equally well to the history of previous stillbirths. Of a somewhat different nature is the occasionally observed fact that intrauterine fetal death habitually occurs in some patients just before term. This is probably most frequently noted in diabetics though it may occur in others for reasons that are largely unknown. In these circumstances premature termination of pregnancy has been recommended even by section in order to forestall the loss of another child.

Uterine anomaly is more often listed as an indication for section than is justified especially when the patient has had other spontaneous deliveries. Not only is the anomaly in the vast majority of cases of such nature as to have little if any effect on the course of labor but the diagnosis is frequently made with little to support it.

Myomata and other pelvic tumors are valid reasons for cesarean section only if they are so located as to obstruct delivery, if they are so large or numerous as to favor the occurrence of a malpresentation or interfere with proper uterine action or if they are so large as to produce acute local or general symptoms requiring prompt surgical intervention on their own account.

The writer dislikes the use of the term "elderly primipara" as an indication for section because these women are not elderly and because it seems to suggest that they show a characteristic type of dystocia distinct from all others. This, of course, is not true though they more often present those types of dystocia which are due to pelvic soft tissue resistance and to defective uterine action resulting from diminished elasticity and increased fibrosis. The limitation of their future childbearing function, however, warrants as much readier resort to section in the interests of the child if dystocia of any sort should occur. Furthermore, it has recently been shown by Dr. Galloway* that the incidence of toxemia and other conditions which may themselves constitute an indication for section increases with advancing age primiparity.

Neither primary inertia, secondary inertia, nor the mere prolongation of labor alone constitute a reason for section.

All too often primary inertia or some vague form of dystocia is considered an excuse for section in patients who after some hours of supposed labor still show no dilatation and in whom the membranes are still intact. Actually these patients should not be considered to have been in labor at all and more careful observation will show that the pains of which they complain present none of the characteristics of true labor pains.

Cesarean section has no place in the treatment of an uncomplicated secondary inertia which by definition cannot occur until labor has made considerable progress. Often this inertia is induced by oversedation and will disappear as its effects wear off. At other times it is induced by fatigue in which case it usually disappears after the patient has been given a period of rest

induced by the administration of a desirable hypnotic or morphine.

While the mere prolongation of labor is no indication for section it may be complicated by evidence of maternal exhaustion or fetal distress which themselves might call for interference, though not necessarily cesarean section. In such cases, however, the complication rather than the prolonged labor should be recognized as the reason for whatever interference is undertaken.

Unassailable indications for section are few indeed when the head is deep in the pelvis and the outlet is normal. *Prior* to the onset of labor or the attainment of any considerable degree of dilatation such indications are limited almost exclusively to serious toxemia or heart disease and some cases of hemorrhage. *After* cervical dilatation is well advanced possible indications become further reduced to the practical vanishing point since any need for prompt termination of labor could be met by measures intended to secure delivery through the natural passages. Thus cervical dilatation, if incomplete could be completed manually or by the use of Dührssen's incisions, following which delivery could be effected by forceps. When, however, the head is still high in the pelvis any possible necessity for immediate delivery could be met by version and extraction in preference to forceps, provided cervical dilatation is complete. If, on the other hand, the cervix is not entirely out of the way the dangers which this places in the way of version and extraction in its relation to the after-coming head are so very real that one would be forced to weigh the probable results to be obtained by waiting until conditions might be rendered suitable for vaginal delivery against those likely to be obtained by cesarean section.

A dystocia due primarily and chiefly to an occiput posterior position is alone no reason for resort to section. Since the characteristic dystocia manifests itself only after the head has begun its passage through the pelvis the procedure to be followed should interference become necessary is, with one exception, essentially the same as that outlined for occiput anterior positions with the head deep in the pelvis. Whereas one ordinarily would resort only to forceps should delivery become necessary under circumstances of complete dilatation with the occiput anteriorly and the head deep in the pelvis, one might employ for-

*Paper presented at the 1937 annual meeting of the Central Association of Obstetricians and Gynecologists in Dallas, Texas.

ceps or version and extraction, in similar circumstances involving occiput posterior positions, the version effecting a simultaneous correction of the malposition. The writer, however, prefers to use forceps and has no particular hesitancy in delivering the occiput posteriorly should any appreciable difficulty attend efforts at effecting rotation. This is due to his belief, as expressed in previous writing, that the vast majority of occiput posterior presentations occur in association with the anthropoid type of pelvis, narrow from side but with large anteroposterior measurements. In such cases less harm is apt to result from delivering the occiput posteriorly than would attend efforts at effecting rotation. The performance of moderate sized bilateral episiotomies or a very deep unilateral one is most helpful.

It would be well to hesitate before doing section when any internal manipulation whatever has been done *prior* to the patient's hospital admission especially when the apparent indication is unrelated to disproportion. Every one of four such cases had a postoperative infection which in one patient, subjected to attempted forceps delivery prior to admission, eventuated in death. If, despite these circumstances, section is nevertheless absolutely indicated or is made advisable in the interests of the child for religious reasons then the Porro operation or some modification thereof is preferable to one of the ordinary types of section.

There are always instances in which the premature termination of pregnancy is indicated for non-obstetrical reasons, the non-obstetrical condition affecting the patient being considered the fundamental one while the obstetrical status is considered the complication which must be dealt with from the standpoint of its effect upon the initial or major illness. Cardiac decompensation and pregnancy is a well-recognized and accepted example. At other times the relationship is not nearly so clear and is often considerably strained. Even though the relationship be definite and the indication for interference established there exists a wide range of procedures the proper choice and conduct of which as elsewhere in obstetrics constitutes a test of judgment, versatility, and technical skill.

Humboldt Bldg.

VITAMIN B₁ IN ALCOHOLIC POLYNEURITIS

With a report of 48 cases

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That certain diseases productive of polyneuritis in man are due to a vitamin deficiency has been known for a good many years. Perhaps the first to point out this relationship was Vedder¹ who suggested a deficiency disease hypothesis in relation to beriberi shortly after Funk² introduced the word "vitamin." It was later suggested by Wechsler³, Minot⁴ and others⁵ that other forms of polyneuritis were possibly due to an avitaminosis. Lately it has further been shown by Strauss,⁶ Jolliffe,⁷ and Blankenhorn⁸ that there is a definite relationship between the polyneuritis of the alcohol addict and a deficiency in vitamin B₁. That there is a definite deficiency present in the alcohol addict has been clinically proved by Strauss, who obtained improvement in subjects given from a pint to a quart of whiskey daily along with a diet containing large quantities of vitamin B₁, and by Goodhart,⁹ who found a greater therapeutic response in a group of patients given large quantities of vitamin B₁ than in a group given ordinary quantities.

The cause for an avitaminosis in the alcohol addict is probably due to several etiological factors. The alcohol addict is notoriously careless about his eating habits and it is more than likely that there is an insufficiency in his daily intake of foods rich in this substance (vitamin B₁). Since vitamin B₁ is not stored in the body to any great extent¹⁰ it is necessary that the daily diet contain adequate amounts of the vitamin. It is further probable that the gastro-intestinal disturbances not uncommon among alcoholics interfere with the absorption of vitamin B₁. Another reason for this deficiency may be due to increased excretion. It is known that vitamin B₁ is excreted in the urine, the vitamin being water soluble, and it is a known fact that most heavy drinkers will pass larger quantities of urine in a given period than a total abstainer, thus it is possible there is a greater output of vitamin B₁. It is more than likely that the avitaminosis can be attributed to a combination of these factors rather than to any one of them.

The neuropathological changes which occur in

vitamin B₁ deficiency have been shown by Sullivan¹¹ to be microscopic in nature. There are no gross abnormalities found in the brain. The microscopic changes are found in the brain and the spinal cord and consist of a central chromatolysis, and lateral displacement of the nucleus with a swelling of the cell body. These changes are usually most pronounced in the medium sized pyramidal cells of the cortex, the nucleus ambiguus, the ventral horn cells, the oculomotor nucleus, and the lateral horn cells. The neuropathology is degenerative in type rather than inflammatory. This central change is no doubt a terminal state and is preceded by changes in the posterior ganglion cells. The regeneration of the peripheral nerves is dependent on the viability of the cell body so that when the polyneuritis is acute and not far advanced one would expect rather rapid regeneration. In cases further advanced regeneration naturally takes much longer inasmuch as the regeneration starts at the cell body and proceeds distally at the approximate rate of one millimeter a day.

The neural symptoms of vitamin B₁ deficiency are usually insidious in onset and most frequently affect the lower extremities first. The first symptoms are subjective in nature and consist of a feeling of heaviness in the legs with some weakness after walking variable distances. This is followed by burning of the soles of the feet and numbness of the foot and leg muscles. Objective signs then appear and are characterized by tenderness of the calf of the leg, followed by toe and foot drop, diminution of the patellar and ankle reflexes, and atrophy of the muscles and skin. The skin becomes smooth and shiny and may be hyperesthetic, although in my experience it was more frequently found to be anesthetic. The hands and arms next become affected occasionally followed by some involvement of the tenth cranial nerve. The chief mental manifestation is a progressive loss of memory, although if Korsakoff's syndrome is present the mental symptoms of that disease will be found.

Assuming that there is a deficiency of vitamin B₁ in alcoholic polyneuritis it is evident that therapy must be directed toward compensating for this deficiency by giving adequate amounts of this substance either by mouth or by parenteral therapy. In order to determine the amount to give it is necessary to know the normal vita-

min B₁ requirements of the average individual. This requirement has been estimated by Vorhaus, Williams and Waterman¹² to be about 1 mg. of pure crystalline vitamin B₁. Cowgill¹³ has further indicated that the weight of the individual must be taken into consideration in a determination of the minimum requirements, while Williams¹⁴ believes that the daily requirement is also proportional to the food intake, especially the carbohydrate intake. All investigators seem to agree, however, that the daily minimum requirements of the normal individual should be somewhere around 1 mg. or from 333 to 200 international units. The therapeutic dose must then be in excess of this daily minimum requirement. Just how much it should be in excess of the minimum requirements is not known. It has been determined that there is an optimum amount which has been estimated by different workers to be anywhere from ten to fifty times the minimum daily requirement of the individual.

REPORT OF CASES

The cases here reported represent a study of forty-eight male patients suffering from varying degrees of alcoholic polyneuritis. Twenty-five of the patients received vitamin B₁ (thiamin chloride) by subcutaneous hypodermic injection and the remaining twenty-three received only the amount contained in the daily diet. The patients were graded as to the severity of the symptoms as "severe," "moderately severe" and "mild." In making this more or less arbitrary classification both subjective and objective symptoms were taken into consideration.

The patients classified as "severe" were those who had subjective symptoms of pain, burning of the soles, anesthesia or hyperesthesia, and weakness. In addition objective symptoms of absent knee jerks, absent ankle jerks, atrophy of the muscles of the leg, atrophy of the skin, and in some cases foot and ankle-drop were present. In all of these cases there was considerable difficulty in locomotion.

The "moderately severe" cases had subjective symptoms as above. The objective symptoms consisted of diminution of the knee and ankle jerks and no evidence of muscular or skin atrophy.

The "mild" cases had only subjective symptoms characterized by pain, tenderness on pressure, burning of the soles, hyperesthesia and anesthesia and in some cases weakness.

There were sixteen cases in each of these groups. Of these nine of the severe cases, seven of the moderately severe, and nine of the mild cases received vitamin B₁. The remainder served as controls.

The patients classified as severe in both groups all showed complete subjective relief in the number of days indicated (Figs. 1-2). All of these patients were

Case	Age	Duration This Attack	Involvement and Severity*	Former Attacks	Days Until Relief	Average Daily Dose	Vitamin B1 Results	Comments
1	56	3 weeks	U-L-S	None	8	20 Mg.	Complete Relief of Subjective Symptoms	Optic Amblyopia not improved
2	42	4 months	L-S	One	14	20 Mg.		Upper extremities α —
3	34	2 months	U-L-S	Two	18	20 Mg.		Knee—ankle jerks 3rd day
4	38	4 months	L-S	One	8	30 Mg.		No knee jerks on discharge
5	62	6 months	U-L-S	None	16	20 Mg.		Knee jerks on 3rd day
6	48	2 months	L-S	Two	7	20 Mg.		Absent knee jerks—
7	36	4 days	L-S	One	5	24 Mg.		Fixed pupils—not improved
8	56	2 weeks	L-S	Two	4	20 Mg.		Knee jerks on 8th day
9	54	4 days	L-S	None	14	20 Mg.		Knee jerks on 4th day
Average number days until relief of symptoms.					10.4			Atrophy—muscles right leg
10	48	1 month	U-M	One	4	28 Mg.	Complete Relief of All Symptoms	Knee jerks on 8th day
11	52	2 days	L-M	None	5	20 Mg.		
12	26	1 month	L-M	None	4	20 Mg.		
13	44	6 days	U-M	None	6	4 Mg.		
14	46	1 week	U-L-M	None	6	10 Mg.		
15	61	10 days	L-M	None	8	16 Mg.		
16	47	4 days	U-L-M	Four	10	20 Mg.		
Average number days until relief of symptoms.					6.1			
17	31	2 days	L-Mi	None	4	20 Mg.	Complete Relief of All Symptoms	
18	26	6 days	L-Mi	None	4	16 Mg.		
19	34	1 week	L-Mi	None	6	10 Mg.		
20	56	1 day	L-Mi	One	3	20 Mg.		
21	66	4 days	L-Mi	None	4	20 Mg.		
22	54	3 days	L-Mi	One	3	16 Mg.		
23	50	2 weeks	L-Mi	None	4	16 Mg.		
24	46	10 days	L-Mi	None	6	16 Mg.		
25	37	3 days	L-Mi	None	5	10 Mg.		
Average number days until relief of symptoms.					4.3			

*U=Upper extremities.

L=Lower extremities.

S=Severe.

M=Moderately severe.

Mi=Mild.

Fig. 1

Case	Age	Duration This Attack	Involvement and Severity*	Former Attacks	Days Until Relief	Results	Comments
1	48	1 month	U-L-S	None	16	Complete Relief of Subjective Symptoms	Knee jerks on 8th day
2	58	1 month	L-S	Many	18		Knee jerks on 6th day
3	36	2 weeks	L-S	One	10		Still some weakness—on discharge
4	30	2 weeks	U-L-S	Two	9		Upper extremities normal on discharge
5	36	1 week	L-S	One	28		Knee jerks on 3rd day
6	36	1 month	L-S	None	21		Knee jerks on 10th day
7	40	3 weeks	L-S	One	16		Foot drop—
Average number days until relief of symptoms					18		Knee jerks on 8th day
8	32	1 week	L-M	None	6	Complete Relief of All Symptoms	
9	46	3 days	L-M	One	4		
10	29	2 days	L-M	Three	6		
11	62	10 days	L-M	None	8		
12	34	4 days	U-L-M	None	6		
13	49	6 days	L-M	None	8		
14	28	4 days	L-M	None	3		
15	42	8 days	U-L-M	None	9		
16	22	1 week	L-M	One	8		
Average number days until relief of symptoms					6.5		
17	54	1 day	L-Mi	None	2	Complete Relief of All Symptoms	
18	46	2 weeks	L-Mi	One	5		
19	44	4 days	L-Mi	None	4		
20	51	3 days	L-Mi	None	3		
21	54	1 day	L-Mi	None	4		
22	47	4 days	L-Mi	One	6		
23	64	2 days	U-L-Mi	Two	8		
Average number days until relief of symptoms					4.5		

*U=Upper extremities.

L=Lower extremities.

S=Severe.

M=Moderately severe.

Mi=Mild.

Fig. 2

discharged before the objective symptoms had returned to normal but they all showed some objective improvement. All of the other patients obtained complete relief.

The average dose of vitamin B₁ (thiamin chloride) as shown on the chart represents the mean of the total daily doses. In most cases the initial daily dose was about one-third higher than that shown as the average dose. This amount was decreased, depending on the therapeutic response of the patient. In all cases obtaining complete relief the vitamin B₁ was discontinued one or two days following alleviation of the symptoms. There were no relapses following this discontinuance.

The control cases were given no supplementary vitamin either by mouth or by hypodermic injection. They received a diet estimated to contain an equivalent of crystalline vitamin B₁ of 1-2 mg. per day. A summary of these patients is given on the chart, Fig. 2. None of the patients received a sedative or any other drug to control neuritic symptoms after the third day.

RESULTS

Of the severe cases subjective relief was obtained in the group treated with vitamin B₁ in an average of 10.4 days. In the control group subjective relief was obtained in an average of 18 days. The moderately severe cases in the treated group obtained complete relief of all symptoms in an average of 6.1 days, and the control group in 6.5 days. The mild cases in the treated group obtained complete relief in an average of 4.3 days and in the control group in an average of 4.5 days. There were no cases in either group that failed to show improvement.

COMMENT

Although this group of cases is too small a series to allow one to draw sweeping conclusions it is easily apparent that there is very little difference in the time of recovery for the patients receiving large doses of vitamin B₁ by subcutaneous hypodermic injection and those receiving but slightly more than the estimated minimum daily requirement by mouth. This should not by any means cause one to reject the idea that there is an avitaminosis in alcoholic polyneuritis but should rather strengthen the belief that in most cases of vitamin B₁ deficiency, especially where the symptoms are only moderately severe, an adequate diet will correct the deficiency.

In all of these cases the alcohol was completely removed by the end of the third day, and in all of the mild cases and most of the moderately severe it was taken away immediately. This no

doubt resulted in additional absorption of the vitamin from the stomach and small intestine. Following withdrawal of the alcohol all of the patients noticed an improvement in appetite with a consequent greater intake of food. These results would tend to bear out Williams' attitude¹⁵ when he states that in the long run we should look to the grocery store rather than the drugstore for a normal vitamin intake.

CONCLUSIONS

In a group of twenty-five patients with alcoholic polyneuritis treated by subcutaneous hypodermic injection of vitamin B₁ (thiamin chloride) and a control group of twenty-three patients receiving only the vitamin B₁ contained in the diet there was practically no difference in the time required for complete alleviation of symptoms.

The severity of the symptoms and the time required for recovery seems to be directly proportional to the duration of the neuritis.

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15. *Ibid*, page 732.

INFECTION, ARTHRITIS AND ALLERGY WITH AN ALLERGIC DIETARY REGIMEN

L. C. BOEMER, M. D., F. A. C. S.

ST. LOUIS

A triad, infection, arthritis and allergy, is presented as a clinical entity in nine individual cases, and in each it is considered that the infection precedes the arthritis but that allergy is a concomitant factor. (For details of cases see current article in *The Laryngoscope*.)

The diagnosis of the arthritis is based upon symptoms and physical findings and not upon positive x-ray evidence of bone or tissue changes, such as obtain in late cases. Some of the joint involvements may be due mainly to edema on an allergic basis.

The state of allergy is proven by the history, physical findings, nasal and postnasal smears for eosinophiles, the mucosal, non-specific protein skin, and the leucopenic index tests. Routine skin tests are not relied upon to prove the allergic ingestants, and, as to the inhalant allergens, suggestions are made to avoid dusty, overheated, or tobacco-smoke laden environments and to use orris free cosmetics, allergen proof encasings for feather pillows, et cetera.

The common food allergens are found to be wheat, eggs, milk and chocolate, and, in some cases, it is considered advisable to avoid all of the following:

Wheat flour, graham bread, brown bread, bran bread, whole wheat bread, cakes, pies, pastries, sauces, macaroni, spaghetti, noodles, Postum, majority of breakfast foods, most sausages, hamburgers made with bread crumbs, eggs, waffles, mayonnaise, puddings, ice cream, ices, beef juices, baking powder (except Royal), milk custards, creamed soups, creamed vegetables, fillings, sweetbreads, candies made with chocolate, eggs, milk or nuts, whipping cream, pancake flour, milk, cream, malted milk, cheese, beer, Scotch whiskey, gin, coca-cola, orange juice, tomato juice, chili sauce, catsup, Worcestershire, A. I. Lee & Perrins sauces, pork, lard, Crisco, Wesson oil, cottonseed oil, Spry, nuts, peanut butter, and above all chocolate.

The diet will be relatively low in carbohydrates. The most calories and dynamic, specific

energy is to be obtained from a variety of meats, which may be broiled, or fried in tallow, butter, or Mazola oil. The keynote is a diversity of food and no particular foods in continuous succession or excess at any time. Loss of weight in the thinner type of person demands actual food calory intake determination to enable further suggestions. Vitamin, calcium, and other indicated therapies are essential.

THE LISTED FOODS IN CAPITAL LETTERS ARE
RECOMMENDED AT EVERY OPPORTUNITY;

THOSE IN PARENTHESIS ARE TO BE PAR-
TAKEN OF OCCASIONALLY, THE OTHERS

FREELY

<i>Fruit</i>	Turnips
Apple	Watercress
APPLE SAUCE	<i>Miscellaneous</i>
APRICOTS	SUGAR
(Banana)	OLIVES
Berries, except straw.	CRANBERRY SAUCE
Cantaloupe	JAM
Cherries	JELLY
CURRENTS	KARO and MAPLE
DATES	SYRUP
FIGS	Raisins
GRAPES	TAPIOCA
Grapefruit	JELLO
Lemon	OLIVE OIL
Lime	MAZOLA OIL
PEACHES	Butter
PEARS	Candy, stick, hard
PINEAPPLE	<i>Soups</i>
PLUMS	Pea, bean, vegetable
PRUNES	<i>Meats</i>
TANGERINE	(Bacon)
Watermelon	Bass
<i>Cereal</i>	(Beef, dried)
Corn Flakes	Beef, Lean
Oatmeal	Beef, Roast
Puffed Rice	Beef, Stew
Rice Flakes	(Bologna)
Rice Krispies	(Chicken)
<i>Bread</i>	Corn Beef
RY-KRISP (Ralston)	(Codfish)
Pumpernickel	Dove
Corn Bread	Duck
<i>Liquids</i>	Quail
Juices	Goose
(except orange	(Haddock)
and tomato)	(Halibut)
Fruit Nectars	(Ham)
(Coffee)	Hamburger
TEA	(Herring)
WATER	(Jack Salmon)
<i>Vegetables</i>	Kidney
Asparagus	LAMB CHOPS
Beans, Kidney	LAMB PATTIES
Beans, Lima	LAMB ROAST
Beans, String	LAMB STEW

BEETS	LIVER
Cabbage	(Lobster)
CARROTS	(Mackerel)
Cauliflower	MUTTON
CELERY	Oysters
CORN	(Pork Chop)
EGG PLANT	(Pork Roast)
HOMINY	(Salmon)
LETTUCE	(Sardines)
Mushrooms	(Scallops)
Parsnips	(Shrimp)
PEAS	Squab
(Potato) Sweet, freely	STEAK
PUMPKIN, canned or	TONGUE
fresh	TROUT
Rhubarb	(Tuna fish)
RICE FREELY	TURKEY
Rutabaga	VEAL STEAK
SPINACH	VEAL STEW
Squash	VEAL ROAST

Beaumont Medical Building.

WOMEN STAND PROSPERITY BETTER THAN MEN

A Bulletin from the State Department of Health states that:

Women can stand prosperity and affluence a great deal better than men, but the malevolent influence of poverty strikes male and female alike, making no distinction between sexes and giving little if any advantage to babies and children. This at least appears to be true concerning health, as reflected in evidence revealed by a study of mortality according to occupation and social class in England and Wales.

Mortality among men with a comfortable income (Class I in the social scale) from diseases attributable to overweight, rich diet, other excesses and neglect of physical exercise, such as diabetes cerebral vascular lesions and nephritis, is considerably higher than that among males in the population generally and much higher than among males with "uncomfortable" incomes. Among the wives of these affluent men, however, the mortality from these causes is no greater than among women generally or among women lower in the economic scale. The death rate among babies in the lowest economic group, Class V, was 25 per cent higher than in the population at large while in Class I, the most favored economically, the rate was only about one-half that in the general population. In other words, the death rate among babies in families of the poorest class is five times that among families in the highest economic class.

Each step down the social and economic scale, on the other hand, is accompanied by a higher and higher death rate from tuberculosis, syphilis, cancer, valvular heart disease, pneumonia, pleurisy, hernia, insanity, gastric ulcer and even accidents. Men and women share alike in this disadvantage as compared with men and women in the more favored economic classes. While several diseases, particularly tuberculosis and cancer, are asso-

ciated with and favored by certain occupations, this report of the Registrar-General of England and Wales indicates plainly that the economic factor, poverty and affluence, is dominant in respect to general health. "In general," says the report, "it appears from these sex comparisons, and from the regional study of the data, that the immediate effects of occupation on men's mortality are of relatively slight importance compared with the environmental and economic conditions of home life. The worse these general environmental conditions the greater become the social contrasts in mortality in both sexes. An additional and important observation is that the effects of such factors are very much less serious in rural areas than in industrial towns."

LONGEVITY

The Bulletin of the State Department of Health says:

In the 12 States which comprised what is known as Death Registration Area of the United States (which now includes all States of the Union) the average expectation of life in 1901 was slightly more than 49 years. In 1936, when the Registration Area included all States, the average expectancy was nearly 61 years (60.8). In other words, the average duration of life in the United States was 11½ years longer in 1936 than it was in 1901. For whites, the rate of gain has been more rapid than for colored inhabitants.

The gain in life expectancy has been distinctly more rapid for white females than for white males. For the former, the average life span was 64.36 in 1936 against 51.08 in 1901, an increase of 13.28 years while for white males it was 60.18 in 1936 against 48.23 in 1901, a gain of 11.95. Throughout this period women have had a longer life expectancy than males and the difference, now somewhat greater than 4 years, is growing gradually in favor of women. Since 1930 the average life expectancy for the entire population in the United States has tended upward at a much reduced rate, being 60.3 in 1931 and 60.8 in 1936.

There seems to be a double reason for the greater longevity of females—biologic and practical. The biologic factor is suggested by the fact that more male than female babies are born—ranging from 103 to 105 or so males per 100 females. The practical factor is suggested by the greater gains in longevity of females. Males suffer much higher mortality than females from accidents, homicide and suicide. The higher mortality in males from such causes are by no means offset by female deaths from complications of childbirth. Women are more closely associated with the health protective practices involving children. Influenced thereby, they probably profit more than men by the newer knowledge of health conservation and thus gain more in longevity.

CAPITAL AND LABOR

The Boston News Bureau facetiously expresses a real truth in these words:

"The trouble with a lot of men who spout so profusely about capital and labor, is that they never had any capital, and never did much labor."

—Patchwork.

SUCCESSFUL MANAGEMENT OF PARATHYROID TETANY

MacBryde Cyril M., *Southern Medical Journal* 31: 720, 1938, says:

The surgical technique of removing portions of the thyroid gland has become so perfected that the incidence of parathyroid tetany has been reduced to figures ranging from 1.5 to 0.5%. Apparently the removal or injury of the parathyroid tissue is followed by a decreased secretion of parathyroid hormone and a subsequent drop in blood calcium. This decrease in blood calcium results in an hyper-irritability of muscle tissue. In many instances the symptoms are temporary but in certain cases a state of chronic or, we might say, subacute tetany develops and is frequently overlooked.

In reviewing the measures for the treatment of chronic tetany, it might be well to mention the intravenous and oral use of calcium salts and the intramuscular administration of parathyroid extract. Patients often develop tolerance to the latter to the point where little or no effect is obtained. Hydrochloric acid or ammonium chloride is frequently given with cod liver oil or viosterol in large doses. A low phosphorus diet has been advocated by Shelling. The author has had poor results with parathyroid transplantation.

During the past year the author has been using a new therapeutic agent, a derivative of irradiated Ergosterol known as dihydrotachysterol. This has been given orally in an oily solvent containing 5 mg. per cc. For the first time, patients were relieved of all symptoms with the use of individualized doses of dihydrotachysterol and a diet rich in calcium.

HUMANE POUND LAW DEFEATED. ANIMAL EXPERIMENTATION TO CONTINUE

The *Journal of the American Medical Association*, November, 1938, says: The voters of California and Colorado, November 8, 1938, by overwhelming majorities rejected proposals made in those states to undermine the structure of scientific medicine.

In California an initiative humane pound law, so called proposing to cripple scientific research by hampering animal experimentation, was decisively defeated. In Colorado an initiative measure proposed by a group of chiropractors, to debase the quality of medical care in the state by repealing the basic science act and by destroying other safeguards that have been erected to assure adequate and scientific medical service, was met by an avalanche of negative votes, running as high as ten to one in some counties.

In Oklahoma an initiative measure that would have sanctioned practices not conducive to public welfare failed to get on the ballot, because of court action instituted by the medical profession. In Ohio a chiropractic initiative somewhat similar to the Colorado initiative died aborning, the cultist sponsors apparently becoming disheartened shortly after the proposal was submitted to the attorney general for his approval as to form. Petitions in Ohio were not circulated and the proposed initiative measure was not submitted to the people for a vote.

The medical associations in the states named assumed

the lead in thwarting the selfish interests behind these proposals, interests that would subordinate the public welfare to their own private ends. In California and Colorado the state medical associations, aided by many lay and other professional groups and by public spirited citizens, informed the people fully of the dangers implicit in the proposals. To bring these dangers to the attention of the voters necessitated great sacrifices of time and money, but the results show that such sacrifices were well worth while and indicate that an informed electorate will support scientific medical care under proper legal care and ethical safeguards.

SOME LEMONS WANTED

Smith had just opened fine new offices. His wife and her girl friend called to inspect them. Not only did they find the office appointments unusually modern and attractive but—the female employees were equally so.

During the inspection trip Smith was called away to the telephone and the conversation between Mrs. Smith and her friend casually turned to household affairs.

"Have you put up any fruit this year?" asked the friend.

"Not yet," replied Mrs. Smith. Then her gaze wandered over to several pretty stenographers and she added: "But I expect to can a few peaches before long."

Knowledge that drops into one's lap like a ripe apple seldom arouses enthusiasm or zest. The discovery of new knowledge, however trivial, thrills. Most of the science we learn today represents the accumulation of discoveries painstakingly explored by pioneers. In accepting it, we seldom give thought to the laborious searchings, the discouraging pursuits of blind trails, the disdain, even persecution, suffered by those who announced the discovery of facts that were contrary to traditional belief. Yet, each scout of science who helped blaze the trail made it easier for the next explorer. Some left no landmarks. Others established temporary stations, long since forgotten. A few built bridges of theory that enabled other explorers to reach new facts.

H. E. KLEINSCHMIDT, M. D.

Marriages

KENNETH L. CARTER, St. Louis, to Miss Frances Elizabeth Ritter of Mattoon, Ill., in December, 1938.

CLAUDE R. G. FORRESTER to Miss Ruth Emma Johns, both of Chicago, January 5.

JAMES B. GILLESPIE, Urbana, Ill., to Mrs. Emily Reeve of Paxton, in San Antonio, Texas, February 27.

RAYMOND F. SHEETS, Carthage, Ill., to Mrs. Elva McCallister in Keokuk, Iowa, February 20.

ARSHAK Y. YAZARIAN, Washburn, Ill., to Miss Satenig Siranossian of Bridgewater, Mass., August 14.

Personals

Dr. Joseph L. Baer was invited to address a public meeting in Macomb on April 26, sponsored by the McDonough County Medical Society.

Dr. Charles N. Pease talked on "Fractures of the Long Bones" before the Kankakee County Medical Society, April 13.

Dr. Charles Edwin Galloway addressed the Sangamon County Medical Society, April 6, subject, "Treatment of Endocervicitis."

Dr. James K. Stack spoke before the Scott County Medical Society, Iowa, April 4, subject, "Fractures."

Dr. Stanley Gibson spoke to the Will-Grundy County Medical Society, April 7, subject, "Acute Abdominal Conditions in Children."

Dr. L. F. Weber was the guest of honor and speaker before the Lawrence County Medical Society on April 5, subject, "Common Diseases of the Skin."

Dr. Max Cutler addressed the Will-Grundy County Medical Society April 14, subject, "Recent Developments in the Diagnosis and Treatment of Cancer."

Dr. F. H. Falls addressed a public meeting at Moline sponsored by the Rock Island County Medical Society, April 21. His subject was "The Significance of Prenatal Care."

Dr. E. W. Pernokis was invited to address the Bureau County Medical Society April 11, subject, "Abnormal Varieties of White Corpuscles and Their Clinical Significance."

Dr. Edwin W. Ryerson was invited by the Missouri Society for Crippled Children to make an address on April 21 in St. Louis on the subject: "The Relationship of the Crippled Child to the Community."

Dr. James H. Hutton was invited to give a talk on "Recent Progress in Endocrinology" before the Will-Grundy County Medical Society at Joliet, April 28.

Dr. Thomas C. Galloway was invited to address the Will-Grundy County Medical Society at Joliet on April 21, subject, "Emergency Laryngeal Obstructions."

Dr. George J. Musgrave will talk on "Nose and Throat Conditions as They Should Be

Handled by the General Practitioner" before the Effingham County Medical Society at Effingham, April 11.

Drs. Robert S. Berghoff, Angelo Geraci and Donald A. Hirsch presented a clinical conference on heart disease before the Peoria Medical Society at Peoria on April 18 followed by a scientific paper on heart disease by Dr. Berghoff.

Drs. Irving F. Stein and T. M. Levin presented a program on obstetrics and pediatrics before the doctors of Shelby and Christian Counties on April 17, subjects "Breech Presentation" and "Infant Feeding."

Dr. Robert F. McNattin of the Department of Roentgenology of Cook County Hospital spoke before the St. Joseph County Medical Society at South Bend, Indiana, on April 19. His subject was "Role of Therapeutic Radiology in Present Day Medicine."

Dr. Louis J. Frederick has been appointed health commissioner of Joliet, succeeding the late Dr. Edward J. Higgins.

Dr. Lawrence F. Weber, Chicago, discussed common diseases of the skin before the Lawrence County Medical Society in Lawrenceville April 5.

The Will-Grundy County Medical Society was addressed in Joliet by Dr. Stanley Gibson, Chicago, April 7 on acute conditions of the abdomen in children.

The Chicago Society of Allergy was addressed March 20 by Dr. Israel Davidsohn on "Heterophilic Phenomena in Immunology."

Among others, Drs. Arthur K. Koff and Edith L. Potter addressed the Chicago Gynecological Society March 17 on "Dangers of Excessive Development of Human Fetus."

A symposium on commitment to mental hospitals was presented before the Illinois Psychiatric Society March 2 by Drs. Francis J. Gerty, Thomas M. French and Abraham A. Low.

A symposium on skull fractures will be presented before the North Shore Branch of the Chicago Medical Society May 9 by Drs. Eric Oldberg, Adrien Verbrugghen and Harold C. Voris.

Dr. Arthur Steindler, Iowa City, among others, addressed the Chicago Orthopedic Society and the Chicago Roentgen Society March 9 on "Compensation and Derotation in the Treatment of Scoliosis."

The Chicago Pediatric Society was addressed March 21 by Drs. Adrian D. M. Kraus on "Periodic Paralysis"; Eugene T. McEnery, "Epidermoid Cysts of the Spleen," and Lloyd E. Harris, "Bromide Intoxication in a Child Four Years of Age."

Dr. Leo K. Campbell gave a public lecture at the Chicago Woman's Club March 8 under the auspices of the Chicago Medical Society on "Eat, Drink and Grow Fat."

At a meeting of the Madison County Medical Society, Alton, April 7, Dr. John S. Coulter, Chicago, discussed the "Home Treatment of Chronic Arthritis."

At a meeting of Mercer County Medical Society April 11 Dr. R. E. Gunning, Galesburg, presented a paper on "Cancer"; Dr. E. C. Franing, Galesburg, a paper on "X-Ray Treatment," and Dr. Harold Swanberg of Quincy, a paper on "Radium in Treatment of Cancer."

The Chicago Society of Internal Medicine was addressed March 27, among others, by Drs. Heinrich Necheles, Rudolf Schindler and Rubin L. Gold on "Surgical Gastritis: A Study on the Genesis of Gastritis Associated with Ulcers."

Dr. Frances Hannett discussed "What Constitutes a Psychiatric Problem in General Practice" before the Chicago Council of Medical Women March 22 and Dr. Adelaide M. Johnson, "Treatment of Children's Problems with Special Reference to Play Therapy."

The Chicago Gynecological Society was addressed April 21 by Drs. Paul H. Wosika and Chauncey C. Maher on "The Coexistence of Prolapse of the Uterus, Urologic Pathology and Hypertensive Vascular Disease" and Hilliard E. Miller and Edward Perry Thomas, New Orleans, "Strictures of the Cervix."

Dr. Isadore Pilot addressed the Chicago Club for the Study of Rheumatic Diseases March 22 on "Different Features of Bacterial and Rheumatic Arthritis," and Drs. Catharine E. Logan and Eugene F. Traut, Oak Park, Ill., "Clinical and Bacteriologic Improvement in Chronic Arthritis Following the Use of Sulfanilamide."

At a meeting of the Chicago Ophthalmological Society March 20 the speakers were Dr. John G. Bellows and Herman Chinn, Ph.D., on "Distribution of Sulfanilamide in the Eye"; Drs. Bertha A. Klien, "Concerning the Dictyoma

Retinae" and Samuel S. Blankstien, Milwaukee, "Comparison of Visual Acinities."

A delayed report from the Research and Educational Hospital of the University of Illinois, Chicago, indicates that this institution has a record of 83.2 per cent. necropsies for the year 1938. Other approved internship hospitals having over 70 per cent necropsies were reported on page 924 of the Hospital Number of The Journal A. M. A., March 11.

The annual meeting of the Illinois Tuberculosis Association was held at the Pere Marquette Hotel, Peoria, April 24-25. Among other speakers will be Drs. Edward Kent Ellis, Murrphysboro, "The Family Physician and the Tuberculosis Problem in Southern Illinois"; William T. Holladay, Amboy, "The Family Physician Views the Tuberculosis Problem"; Loren L. Collins, La Salle, "The Sanatorium Aids the Family Physician," and Frederick M. F. Meixner, Peoria, "The Peoria Sanatorium District."

News Notes

—The Alumni of the University of Illinois College of Medicine will hold a luncheon at the Faust Hotel, Rockford, Ill., on May 3, 1939, at noon. A very interesting program is contemplated. Dr. Wm. Plice '02 will preside. Please make effort to attend.

M. H. Streicher '24,

Secretary, Medical Alumni Association.

—The 63rd annual convention of the American Association on Mental Defect will be held at the Palmer House in Chicago, Illinois, from May 3 to 6, inclusive.

—The Tuberculosis Institute of Chicago and Cook County will conduct a two-day institute for Negro health workers in cooperation with the National Tuberculosis Association April 17-18 at the Y. M. C. A., Wabash Avenue and Thirty-eighth Street. The program will cover the following four themes: A modern concept of tuberculosis, what it is, how it develops; best methods for controlling tuberculosis, including case-finding and hospitalization; the organized campaign against tuberculosis with special stress on Negro organization, and the possibility of controlling tuberculosis.

—The first annual award of the Chicago Surgical Society will be made at a meeting of the

society May 5 to Dr. Raymond F. Hedin of Cook County Hospital and the department of surgery, Rush Medical College. Dr. Hedin's essay, entitled "Polypoid Disease of the Colon: Two Proposed Surgical Procedures, Including the Description of a Colonoscope," will be presented at the same meeting. The \$250 prize is offered to some young man devoting himself to surgery in Chicago, who is not a member of the Chicago Surgical Society, for meritorious work in one or both of the fields of experimental and clinical surgery.

—The Chicago Medical Society held a public meeting on "What Chicago Does for Its Hard of Hearing" at the Chicago Woman's Club April 19. The principal speakers include Frank L. Beals, assistant superintendent, Chicago schools; Dr. Robert Black, acting president, board of health; Dr. Walter H. Theobald, secretary, Chicago Laryngological and Otological Society; Dr. Samuel Salinger, clinical professor of otorhinolaryngology, Loyola University School of Medicine; Miss Irene Hubbell, president, and Dr. Austin A. Hayden, chairman, board of directors of the Chicago League for the Hard of Hearing, and Edward J. Kelly, mayor.

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WANTED—Back numbers of the JOURNAL. We have several requests from libraries for the March, 1937, issue. We have also many requests on file from universities and libraries for all numbers and volumes of the ILLINOIS MEDICAL JOURNAL issued previous to 1916. Communicate with us at 6221 Kenmore Avenue, Chicago, Illinois.

Deaths

OLE HANSEN BERG, Chicago: College of Physicians and Surgeons of Chicago, 1896; on the honorary staff of the Norwegian-American Hospital; aged 71; died, January 8, of diabetes mellitus and hypertension.

ALEXANDER LANE BROBECK, Hoopston, Ill.; University of Louisville (Ky.) Medical Department, 1885; member of the Illinois State Medical Society; aged 85; died January 16, of cirrhosis of the liver.

JOHN HENRY CARPENTER, a Fellow A. M. A., Chicago; National Medical University, Chicago, 1901; member of the Radiological Society of North America; at one time x-ray technician to Cook County Hospital; aged 65; died, January 18, of carcinoma of the esophagus.

PETER M. CAMPBELL, Elgin, Ill.; Detroit College of Medicine, 1891; member of the Illinois State Medical Society; on the staffs of St. Joseph's and Sherman hospitals; aged 78; died, January 17, of lobar pneumonia and chronic myocarditis.

EDWARD V. CHERNEY, Springfield, Ill.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1903; aged 57; died, January 27, of Parkinson's disease.

FRED FERDINAND FAIR, Chicago; Northwestern University Medical School, Chicago, 1905; aged 55; died, Dec. 30, 1938, of cardiovascular renal disease.

ROBERT E. FIVEY, Chicago; Albany (N. Y.) Medical College, 1887; medical director of the Globe Insurance Company; aged 73; died, March 11, in the Evangelical Hospital.

MAURICE LOUIS GOODKIND, a Fellow A. M. A., Chicago; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1889; professor of medicine at the University of Illinois College of Medicine; served during the World War; for many years on the staff of the Michael Reese Hospital; aged 71; died, January 4, of coronary occlusion.

MARK DUANE GUNDRUM, a Fellow A. M. A., Westville, Ill.; Loyola University School of Medicine, Chicago, 1916; served during the World War; aged 49; was found dead, Dec. 25, 1938, of coronary thrombosis.

THEODORE ANTHONY KREUSER, Hines, Ill.; Rush Medical College, Chicago, 1897; member of the Illinois State Medical Society; aged 73; died, January 8, at the Veterans Administration Facility of arteriosclerosis and cardiac hypertrophy.

JOHN MONROE McSPARIN, Carriers Mills, Ill.; Loyola University School of Medicine, Chicago, 1916; served during the World War; for many years member of the board of education; aged 49; died, January 7, of chronic myocarditis, nephritis, hypertension and pulmonary tuberculosis.

DR. FRANK PARSONS NORBURY, founder of the Norbury Sanatorium in Jacksonville, died suddenly from a heart attack on March 14, in Jacksonville. Dr. Norbury was born August 5, 1863 in Beardstown, Ill., and received his early education in the public schools of Beardstown. In June of 1881 he became an office and field assistant on the construction of a lock at Kamps-ville and also at LaGrange and thereafter spent the next five years with the U. S. Engineering Service. He first began the study of medicine in the office of Dr. George Bley in Beardstown in March, 1885 and, in September 1886, he entered the Medico-Chirurgical College in Philadelphia. A little later he entered the Long Island College Hospital of Brooklyn, N. Y., from which school he was graduated March 9, 1888. The

very next day he became resident physician of the Pennsylvania Institute for the Feeble-minded in Philadelphia. It was just fifty years later on March 10, 1938 that the Morgan County Medical Society honored this occasion with a dinner.

In September 1888, Dr. Norbury became assistant physician of the Illinois Central Hospital for the Insane at Jacksonville. It was during that period, on October 2, 1890, that he married Mary E. Garm of Beardstown. He resigned his position in July, 1893 and entered private practice. In 1895 he was appointed to the faculty of the St. Louis College of Physicians and Surgeons but returned to Jacksonville the following year and became attending physician of Oaklawn Retreat and attending physician of the Illinois School for the Blind. He founded Maplewood Sanatorium in 1901 and later, in 1913, opened Maplecrest Sanatorium, both institutions now being known together as the Norbury Sanatorium. In 1909 he became Superintendent of the Kankakee State Hospital and two years later was appointed alienist of the State Board Administration. Since 1913 he has been actively identified with the Norbury Sanatorium.

Dr. Norbury has long been carried on the roster of the Sangamon County Medical Society as an Honorary Member and his many friends in this Society deplore their loss.

MICHAEL RITTER MILEY, Beecher, Ill.; Rush Medical College, Chicago, 1896; member of the school board for many years; formerly mayor; aged 80; died in January of arteriosclerosis and heart disease.

GORDON EDGAR MORDOFF, Wilmette, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1907, aged 56, was shot and killed, January 11.

HEINRICH F. W. PETERSEN, Dundee, Ill.; College of Physicians and Surgeons of Chicago, 1888; member of the Illinois State Medical Society; aged 84; died, January 30, in a hospital at Elgin of cerebral arteriosclerosis, myocarditis and broncho-pneumonia.

CHARLES E. PUGH, a Fellow A. M. A., Chicago; Rush Medical College, Chicago, 1891; aged 73; died, January 18, in the Berwyn (Ill.) Hospital of a skull fracture received in a fall.

MICHAEL JOSEPH PURCELL, a Fellow A. M. A., Chicago; Chicago College of Medicine and Surgery, 1912; fellow of the American College of Surgeons; on the staffs of St. Joseph's Hospital and the John B. Murphy Hospital; aged 60; died, January 2, of arteriosclerotic heart disease.

ELLISON LLOYD ROSS, a Fellow A. M. A., Waukegan, Ill.; Northwestern University Medical School, Chicago, 1918; professor of otolaryngology at his alma mater; member of the American Academy of Ophthalmology and Oto-Laryngology and the American Otological Society; fellow of the American College of Surgeons; attending otolaryngologist to the Passavant Memorial Hospital, Chicago, and Veterans' Administration Facility, North Chicago; on the staffs of the Victory Memorial and St. Therese's hospitals, Waukegan; aged 57; died, Dec. 21, 1938, of heart disease.

JOHN HENRY RUMPF, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1896; aged 76; died, Dec. 1, 1938, of heart disease.

WILLARD CLARK SANFORD, a Fellow A. M. A., Chicago; Chicago Medical College, 1890; formerly associate professor of surgery, University of Illinois College of Medicine; fellow of the American College of Surgeons; on the staff of St. Elizabeth's Hospital; aged 73; died, Dec. 12, 1938, of coronary thrombosis and hypertension.

CLAUDE MURPHY SCARBOROUGH, a Fellow A. M. A., Chicago Heights, Ill.; Northwestern University Medical School, Chicago, 1926; aged 39; on the staffs of St. James Hospital, Chicago Heights and Ingalls Memorial Hospital, Harvey, where he died, January 18, of coronary thrombosis.

HENRY SCHMITZ, a Fellow A. M. A., Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1897; American College of Medicine and Surgery, Chicago, 1906; professor and head of the department of obstetrics and gynecology, Loyola University School of Medicine; past president of the Chicago Gynecological Society; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Central Association of Obstetricians and Gynecologists, Radiological Society of North America, American College of Radiology and the American Radium Society; fellow of the American College of Surgeons; in 1930 received the gold medal of the Radiological Society of North America for achievement in the science of radiology in its application to diseases of women; in 1938 delivered the Janeway Lecture at the annual meeting of the American Radium Society, at which time he was presented with the Janeway Medal; head of the radiation therapy department and attending gynecologist, Mercy Hospital; attending gynecologist to the Cook County Hospital; consulting gynecologist to the Misericordia and Holy Cross hospitals since 1925; director of Cancer Research Institute of Chicago since 1928; secretary, board of trustees, Lewis Memorial Maternity Hospital since 1931; author of "Manual of Diseases of Women," 1912; "Handbook of Gynecology," 1915; "The Physics and Biological Principles of Radiation Therapy," 1922; contributed a chapter on "Radiology" in Davis's Gynecology and Obstetrics, 1934; aged 67; died, April 17, of lobar pneumonia.

MELVILLE WRIGHT STAPLES, Pleasant Plains, Ill.; St. Louis Medical College, 1884; aged 88; died, Dec. 8, 1938, of uremia.

ABRAHAM L. THOMAS, Chicago; Chicago Medical College, 1879; member of the Illinois State Medical Society; aged 88; died, Dec. 19, 1938, of carcinoma of the stomach.

GEORGE NICHOLAS VOGELI, Chicago; Chicago College of Medicine and Surgery, 1913; aged 50; died, Dec. 27, 1938, of angina pectoris.

ABRAM ASHLEY WILSON, a Fellow A. M. A., Davis, Ill.; Northwestern University Medical School, Chicago, 1894; aged 68; died, December 11, 1898, of coronary occlusion.

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 Knox Gelatine Laboratories, Johnstown, N. Y..... 8
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 S. M. A. Corporation, Cleveland..... 7

FINANCIAL AND INSURANCE

Medical Protective Co., Fort Wayne, Ind..... 24
 Physicians Casualty Co., Omaha, Neb..... 21

HOSPITALS

Stokes Hospital, Louisville, Ky..... 21
 Summit Hospital, Oconomowoc, Wis..... 22

INSTITUTE

Chicago Tumor Institute, 21 West Elm St..... 21

PHARMACEUTICALS

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 American Agency, French Vichy, Brooklyn, N. Y.....
 American Can Co., 230 Park Ave., New York City..... 3
 Armour & Co., Chicago.....
 Ernst Bischoff, Ivoryton, Conn.....
 Bovinine Company, Chicago.....
 Bristol-Myers Co., New York..... 13
 Carnrick, G. W., Co., 20 Mt. Pleasant Ave., Newark N. J... 22
 Ciba Company, Cedar and Washington St., New York City.. 26
 Crookes Laboratories, New York City.....
 Denver Chemical Co..... 25
 E. Fougere & Co.....
 Gold Pharmacal Co., New York City..... 22
 Harrower Laboratory 23
 Hoffman-LaRoche, Inc., Nutley, N. J..... 2
 Hynson, Westcott & Dunning, Charles and Chase Sts.,
 Baltimore 24

Lederle Laboratories, 30 Rockefeller Plaza, New York..... 27
 Lilly, Eli. & Co., Indianapolis, Ind..... 14
 Morris, Philip, & Co., 19 Fifth Ave., New York..... 18
 Nutrition Research Laboratories, 332 S. Michigan Ave.,
 Chicago 11
 Parke, Davis & Co., Detroit, Mich..... 5
 Petrolagar Laboratories, 8134 McCormick Blvd., Chicago... 4
 Reed & Carnrick, Jersey City, N. J.....
 Roche Organon, Inc., Nutley, N. J..... 16
 Schering & Glatz, Inc., New York City..... 10
 G. D. Searle & Co., 4737 Ravenswood Ave., Chicago..... 6
 Sharp & Dohme, 111 N. Canal St., Chicago.....
 E. R. Squibb & Sons, New York..... 9
 Frederick Stearns & Sons, New York.....
 Wm. R. Warner & Co., 113 W. 118th St., New York City.. 12
 Winthrop Chemical Co., 170 Varick St., New York City....
 Zemmer Co., Pittsburgh, Pa. 19

SANATORIA AND SANITARIA

Edward Sanatorium, Naperville, Ill..... 23
 Kenilworth Sanitarium, Kenilworth, Ill..... 19
 Michell Farm Sanatorium, Peoria, Ill..... 28
 Milwaukee Sanitarium, Wauwatosa, Wis..... Front Cover
 Norbury Sanitarium, Jacksonville, Ill..... 19
 North Shore Health Resort, Winnetka..... 23
 Rogers Memorial Sanitarium, Oconomowoc, Wis..... 25
 Waukesha Springs Sanitarium, Waukesha, Wis..... 19
 Weirick's Sanitarium, Elgin, Ill..... 21

RADIUM

Physicians Radium Assn., 55 E. Washington St., Chicago.. 21

SURGICAL SUPPLIES

Baum Co., New York.....
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Book Reviews

CLINICAL GASTROENTEROLOGY. By Horace Wendell Soper, M.D. With 212 Illustrations. St. Louis. C. V. Mosby Company. 1939. Price

This work covers the field of gastroenterology with particular emphasis on diagnosis and treatment. It is intended not only for the specialist in disease of the digestive system, but also for the internist and the general practitioner of medicine.

THE VAGINAL DIAPHRAGM. By Le Mon Clark, M.D. Illustrated. St. Louis. The C. V. Mosby Company. 1939.

This work has to do with the fitting and use of contraceptive technique.

KEEP FIT AND LIKE IT. By Dudley B. Reed, M. D. New York-London. Whittlesey House. 1939. Price \$2.50.

The author approaches his subject from two angles: (1) he explains briefly the physical and nervous make-up of the human body and its need for exercise, and (2) he shows how exercise can be fun rather than the grudging chore so many make of it. Different people need different sorts of exercise, and they can get it in many different ways. With an eye to these individual requirements, Dr. Reed tells "when" and "how much," and evaluates every form of exercise from swimming to tennis, and from volleyball to golf.

OUR SEX LIFE. By Fritz Kahn, M. D. Translated from the German by George Rosen, M. D. New York. Alfred A. Knopf. 1939. Price \$6.00.

This is a work of 460 pages divided into ten parts thirty-three chapters. The work is intended as a guide and counsellor for every one. The work is very exhaustive, is well written and covers the subject of sex life in the minutest detail.

THE NEW INTERNATIONAL CLINICS. Edited by George Morris Piersol, M. D. Volume I Series Two. Philadelphia, Montreal, New York. J. B. Lippincott Company. 1939. Price —.

This work consists of original contribution; clinics; and evaluated reviews of current advances in the medical arts by outstanding authorities in America.

ANEMIA IN PRACTICE. By William P. Murphy, A. B., M. D., Associate in Medicine, Harvard Medical School; Senior Associate in Medicine, Peter Bent Brigham Hospital, Boston; Consulting Hematologist, Melrose Hospital, Melrose, Mass. 344 pages with 41 illustrations. Philadelphia and London. W. B. Saunders Company, 1939. Cloth, \$5.00 net.

The information contained in this work and the method used in presenting it makes the book of particular value to the medical student, the interne, and the practicing physician, the author has emphasized the more common or usual clinical pictures and avoided as much as possible any confusion which might fall ref-

erence to the several variations that are frequently encountered in so many of the anemic states.

SURGICAL ANATOMY. By C. Latimer Callander, A. B., M. D., F. A. C. S., Associate Clinical Professor of Surgery and Topographic Anatomy, University of California Medical School; Member of Founders' Group of the American Board of Surgery; Member of American Association of Traumatic Surgery; Associate Visiting Surgeon to the San Francisco Hospital. With a Foreword by Dean Lewis, M. D., Sc.D., LL.D., F. A. C. S. Second Edition, Entirely Reset. 858 pages with 819 illustrations. Philadelphia and London: W. B. Saunders Company, 1939. Cloth, \$10.00 net.

In this revision the author has re-arranged, and in many instances rewritten, much of the text.

The volume has been made smaller by the deletion of obsolete text and out-of-date illustrations. A great many of the illustrations have been spaced more economically. The more recent advances in the surgical anatomy of many topographic regions have been recorded. One hundred new figures, most of them original, has been added.

THE COMPLETE GUIDE TO BUST CULTURE. By A. F. Niemoeller with a Foreword by Edward Podolsky, M. D. New York. Harvest House. 1939. Price \$3.50.

This work covers everything on the subject. Explanatory chapters on creams and lotions, diathermy, mechanical devices, plastic surgery, etc. Every method endorsed by physicians, approved by authorities, and recommended by specialists is described in detail, hundreds of helpful directions for improving the appearance of all types of busts. Practical chapters on massage, diet, posture, etc. Everything is made clear and simple in non-technical language.

GONORRHEA IN THE MALE AND FEMALE. By P. S. Pelouze, M. D., Assistant Professor of Urology, University of Pennsylvania; Consulting Urologist to Delaware County Hospital; Special Consultant to United States Public Health Service; Member of Board of Directors, American Social Hygiene Association and American Neisserian Medical Society. Third Edition, thoroughly revised. 489 pages with 144 illustrations. Philadelphia and London: W. B. Saunders Company, 1939. Cloth, \$6.00 net.

In this edition the author has retained nearly as possible the size of the last edition. Much data in the previous edition not deemed necessary has been deleted in the present edition. There has been the addition of 16 entirely new chapters to the main body has been inserted.

In bringing the work up-to-date every effort was made to cling to the safe and sane in the midst of much that is not finally settled today. The author has clarified much that is causing confusion, all told the physician has furnished with a safe working-basis for the new and up-to-date.

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Webster has the words, and I
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I have a column. What a cinch?
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CONTENTS—Continued

Sulfanilamide Re Peritonissillar Abscess. Benjamin Sonenschein, M. D., Martinsville, Ill.....	450
Cranial Nerve Re Arteriosclerosis, Doctors Roy R. Grinker and Joseph Reich, Chicago.....	453
Chancres of the Cervix. Irving S. Schipper, M. D., Galesburg, Ill.....	45
Vitamins in Ophthalmology. Helen Holt, M. D., Chicago..	458
Cesarean Section. William Carl Stude, M. D., St. Louis, Mo.....	463
Vitamin B ₁ in Polyneuritis. Andrew J. McGee, M. D., Dwight, Ill.....	470
Infection and Allergy. L. C. Boemer, M. D., St. Louis, Mo.....	474

EDITORIALS

Only the House of Delegates.....	381
Evaluating the Social Security or Wagner Bill.....	381
Press Comment on A. M. A. Indictment.....	385
Law Journals vs. Department of Justice.....	388
Mistakes in Social Security Law.....	391
California Doctors Rap Health Bills.....	392
Wisconsin Society Honors Beaumont.....	398
Doctor Writes of Early History.....	394
Pegler Praises Professional Services.....	395
Medical Economics. E. S. Hamilton, M. D.....	397
Woman's Auxiliary.....	398
International College of Surgeons.....	400
Allergists Oppose Oral Treatment.....	401
Illinois Pharmaceutical Association Re Socialized Medicine	401
Iowa and Illinois Central Association.....	401
Chicago Surgical Society Annual Prize.....	401
Free Summer Training Course.....	401
Rabbit Fever.....	402
Postgraduate Courses in Obstetrics.....	402
Trains to A. M. A. Convention.....	403

SOCIETY PROCEEDINGS

Marriages.....	476
Personals.....	477
News.....	478
Deaths.....	479

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While iron has been prescribed for almost three centuries, its therapeutic use is far older than the rational explanation of its action, and opinion concerning its value has changed greatly from time to time. Russell L. Haden, Cleveland (*Journal A. M. A.*, Sept. 17, 1938), reviews the most pertinent clinical literature on the subject. The most recent development in iron therapy has been the renewed emphasis on the greater potency of ferrous salts. While any iron preparation is effective if given in large enough doses, very much less of the ferrous compounds needs to be taken. Thus the two fundamental principles of iron therapy, large doses and the use of a ferrous salt, now generally accepted, only confirm what Blaud, Niemeyer, Immerman, Osler and others thought and practiced. These principles, forgotten by clinicians for many years, have emphasize again our debt to the great clinicians of the past.

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Book Review

CLINICAL BIOCHEMISTRY. By Abraham Cantarow, M.D., Associate Professor of Medicine, Jefferson Medical College; Biochemist, Jefferson Hospital; and Max Trumper, Ph.D., Clinical Chemist and Toxicologist; formerly in charge of the Laboratories of Biochemistry of the Jefferson Medical College and Hospital. With a foreword by Hobart A. Reimann, M.D., Professor of Medicine, Jefferson Medical College. Second Edition, Revised. 666 pages. Philadelphia and London: W. B. Saunders Company, 1939. Cloth, \$6.00 net.

This edition has been revised thoroughly and there has been added a number of new topics. The book correlates laboratory data and clinical findings. There has been a change in title, from "Biochemistry and Internal Medicine" to "Clinical Biochemistry," the latter expresses better the broad scope of application of biochemical observation in modern clinical medicine. The author has presented controversial subject in an important manner, supplemented by an expression of personal opinion wherever possible. Practically every chapter has been entirely rewritten or extensively revised.

PRACTICAL DERMATOLOGY AND SYPHILIS. By Harry M. Robinson, M. D. Philadelphia. P. Blakiston's Son & Co., Inc. 1939. Price \$4.50.

This is a new book of practical procedures for the diagnosis and treatment of the commoner skin diseases and syphilis. Clinical syndromes such as urticaria, erythema multiforme, pityriasis rubra, eczema, rosacea, etc., are listed as clinical or diagnostic entities thus simplifying dermatological nomenclature. Clinical diagnosis is taught from two standpoints: The morphology of primary and secondary lesions, and their distribution. The book tells exactly why and how treatment is to be administered. A large number of illustrations are included.

MEDICAL LEAVES 1939. Chicago, Illinois. Published by Medical Leaves Incorporated. Price \$3.00.

This work is a symposium on Jewish medical problems and a survey of the health status of the Jews throughout the world, by men of national and international reputation.

Medical Leaves was founded in 1937 by a group of physicians for the study of Jewish medical history and contemporary Jewish medical problems. The contributors to the 1939 issue of Medical Leaves are 26 in number and include outstanding Jewish medical men from all over the world. Their papers include discussions on the achievements of Jewish physicians throughout the ages; on the health status of the Jew in the past and in the present; on medical and dental folklore; on matters of immediate importance, as the Jewish medical refugees, and the status of Jewish medical students; on various medical aspects of Palestine; and on other subjects of interest to every Jewish physician and dentist.

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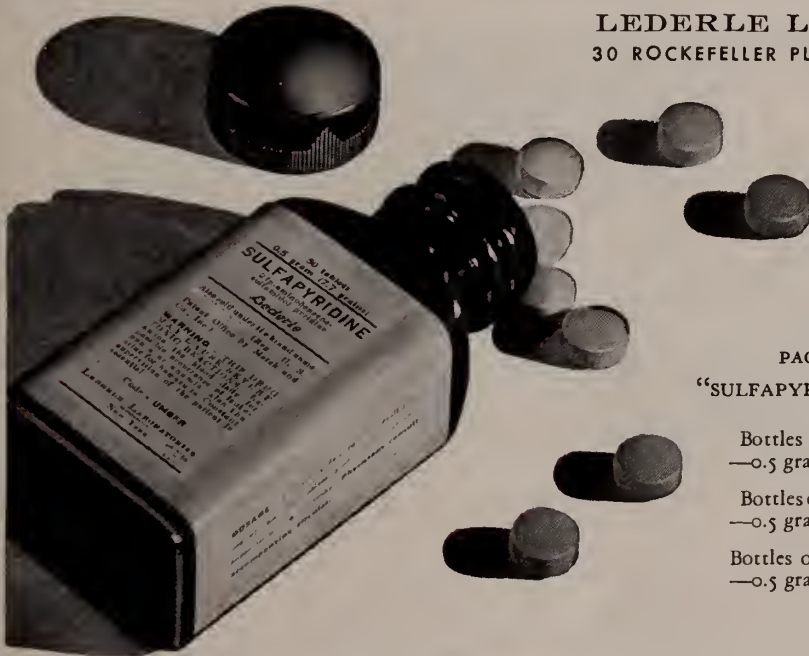
It is too early to appraise the precise place of Sulfapyridine in pneumococcal pneumonia therapy or its relation to the use of serum. Until the efficacy of the drug and its toxic effects have been better defined, it is advocated that both drug and serum therapy be employed.

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CONTENTS:

Editorials (For Titles See Extended Table of Contents) 481

ORIGINAL ARTICLES

- Shall Organized Medicine Continue Its Progress?
Samuel E. Munsan, M. D., Springfield..... 505
- Physiological Viewpoint in Medicine. *Robert W. Keeton, M. D., Chicago*..... 510
- Progress in Ophthalmology. *Samuel E. Meyer, M. D., Chicago*..... 514
- Osteodystrophy. *Harry Olin, M. D., Chicago*.... 517
- Radium Re Diseases of the Skin. *Frank E. Simpson, M. D., J. Ernest Breed, M. D. and James S. Thompson, Ph. D., Chicago*..... 521

- Venereal Disease Control Program. *G. Howard Gowen, M. D., Chicago*..... 542
- Milk of Low Curd Tension. *Maurice L. Blatt, M. D., Chicago*..... 545
- Convulsions Under Anesthesia. *Frank J. Jirka, M. D., Chicago*..... 549
- Two Thousand Peptic Ulcer Cases. *J. Donald Milligan, M. D., Elgin*..... 551
- Prontosil in Pyopneumothorax. *Lawrence Schlenker, M. D., St. Louis*..... 555
- Acute Intestinal Obstruction re Biliary Calculi. *E. Lee Strahl, M. D., and Guy V. Pontius, M. D., Chicago*..... 558
- Chronic Ulcerative Colitis. *A. A. Goldsmith, M. D., Chicago*..... 559

(Continued on page 26)

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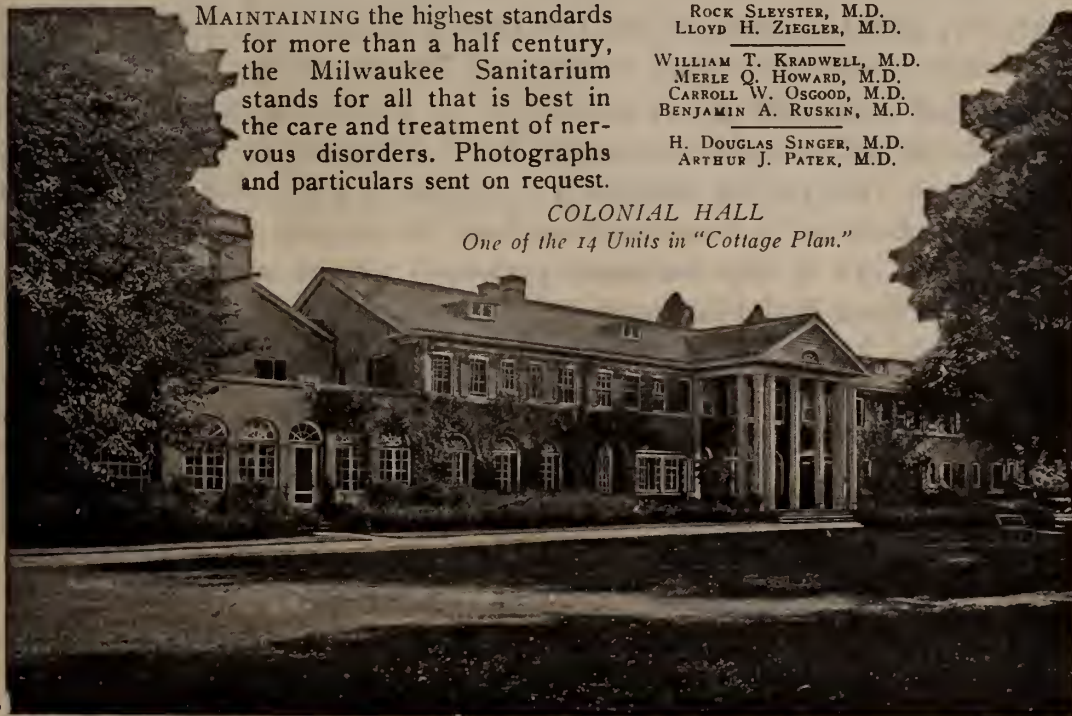
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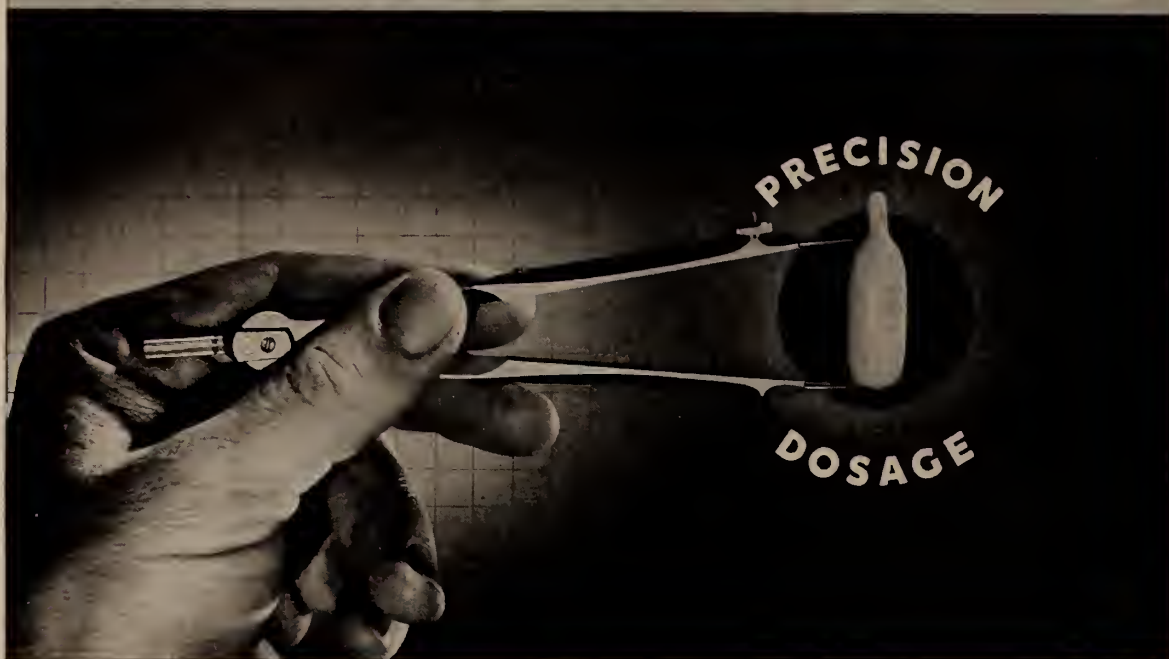
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A MESSAGE TO HOME CANNERS FROM THE CANNING INDUSTRY

● Every year, in various regions of the country, a considerable amount of the produce from thousands of small orchards and gardens is preserved for future use by canning in the home. Despite much that has been written on the subject (1), outbreaks of botulism from improperly heat processed home-canned foods continue to be reported.

To eliminate the possibility of botulism from their products—specifically those foods of the “non-acid” type—home canners should take a page from the experience of commercial canners. Through considerable research, the American canning industry has scientifically established the necessary processing requirements for products of this character. For non-acid foods, modern canners employ only recommended process time and temperature schedules (2) known to be adequate to destroy the heat-resistant spores of *clostridium botulinum* whose growth produces the toxin which causes the deadly type of food intoxication known as botulism.

Brief comment on the heat-processing requirements of common foods might be in order. In general, foods or food products may be classed into two groups according to their acidity, i.e., the “acid” and “non-acid” classes with pH values below and above 4.5, respectively. The acid foods include tomatoes and the common fruits. These foods are not favorable to the growth of *clostridium botulinum* and consequently they may be safely processed at 212°F., or the temperature of boiling water.

The non-acid products, however, present a special processing problem. Such products

—meat, fish, fowl, milk and most common vegetables—can be adequately processed only at temperatures above 212°F. As the records indicate (1) botulism in home canned foods may result from processing non-acid foods in boiling water. Safe canning of these foods in the home, therefore, requires the use of properly operated “pressure cookers”—identical in principle with the “retorts” used by commercial canners—which will permit the use of a process under steam pressure. Usually 10 lbs. steam pressure is used in these cookers which corresponds to a processing temperature of 240°F.

Home canners desiring to pack non-acid products should obtain a copy of United States Department of Agriculture Farmers Bulletin No. 1762. In this bulletin are described the necessary equipment, precautions, and time and temperature processing schedules required for the safe canning of non-acid foods in the home. If the necessary equipment cannot be obtained and the recommendations contained in the above bulletin cannot be faithfully followed, some means of preservation of non-acid products other than canning should be sought.

In the interests of public health, it is our sincere hope that home canners may soon become educated to the necessity of steam pressure processes for non-acid foods. Experience dictates that only by processes of this type, with a time and temperature schedule suitable for each particular product, can botulism from non-acid home canned foods be effectively controlled and ultimately eradicated.

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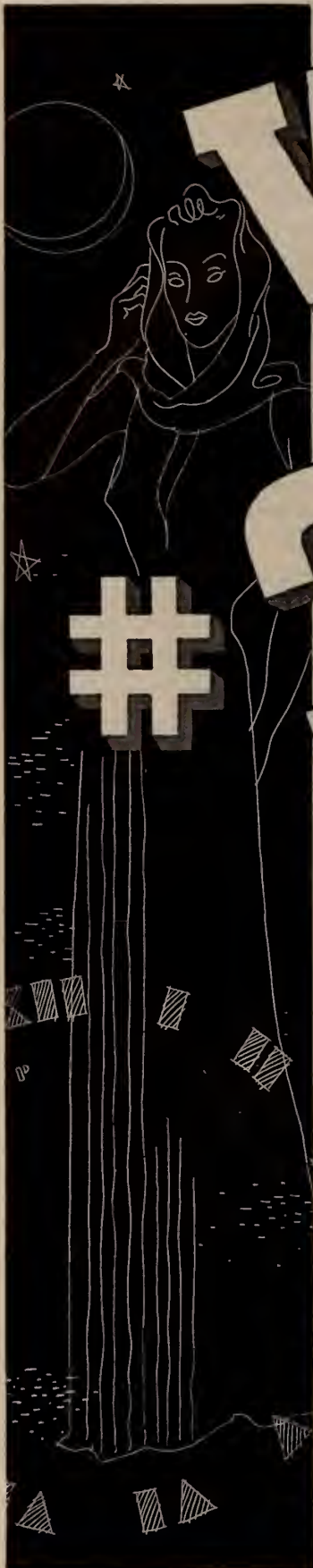
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| 1. 1934. J. Home Econ. 26, 365-376. | 2. 1937. National Canners Association, |
| 1935. Amer. J. Pub. 25, 301-313. | Washington, D. C. |
| 1935. J. Amer. Med. Assn. 105, 205. | Bulletin 26-L, 3rd Ed. |
| 1936. Food Research 1, 171-198. | |

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the forty-eighth in a series, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.



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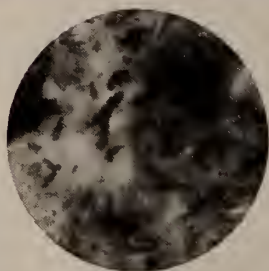
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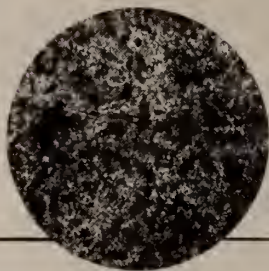
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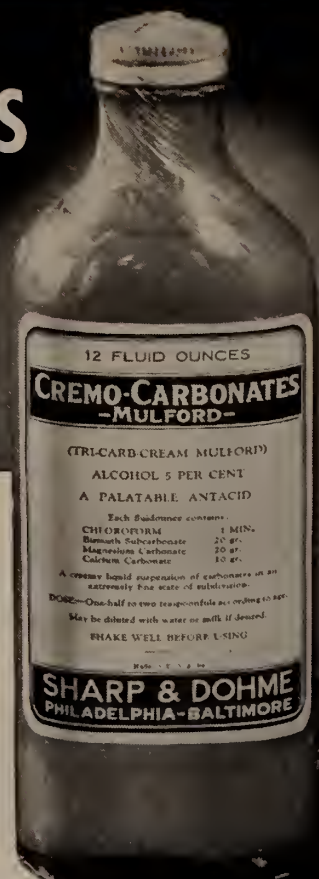
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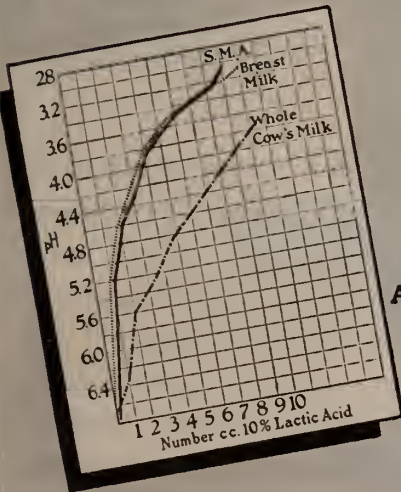
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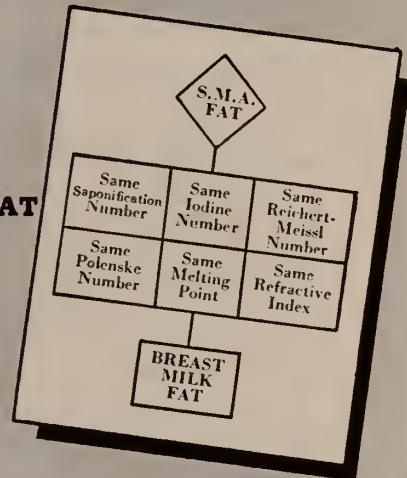
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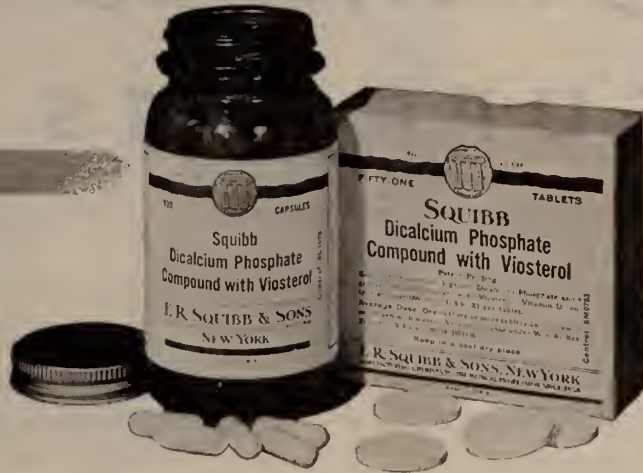
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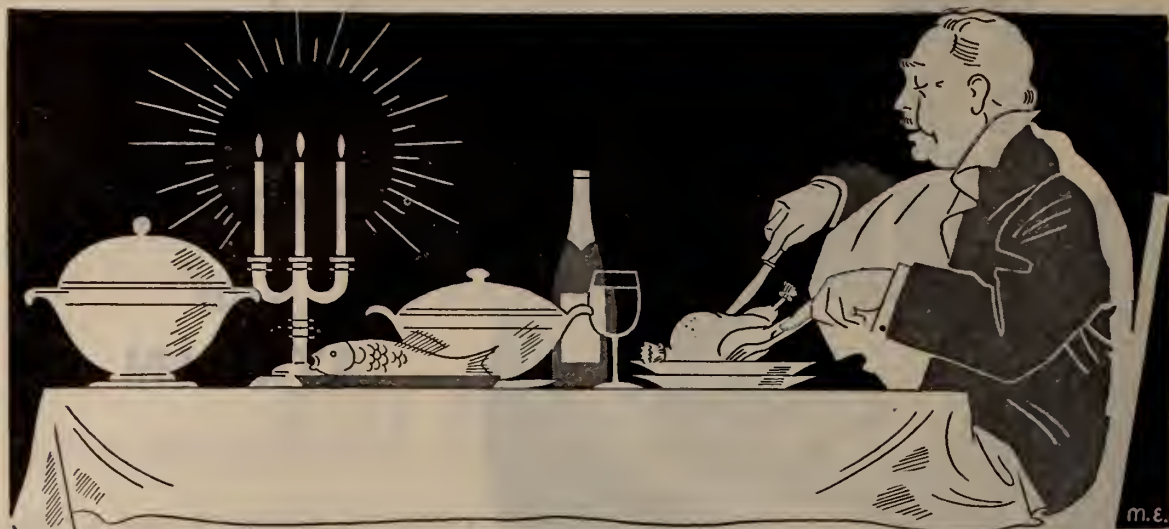
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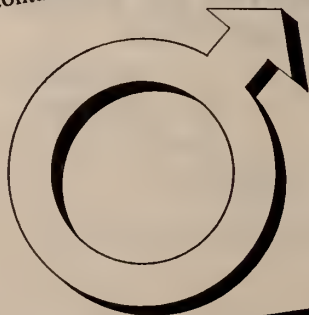


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Editorials

TOO MANY PEOPLE LIVING OFF IDEAS INSTEAD OF REALLY DOING SOMETHING

Thomas H. Benton, Missouri's native artist and a descendant of the great "show me" statesman, says with refreshing frankness that he is fed up with the incessant talk of radical intellectuals. In New York he finds there are too many people living off ideas instead of really doing something. The intellectuals are unable to distinguish between realities and ideas that may be unreal and untried.

Nation's Business.

LOOKING BACKWARD FROM OUR NINETY-NINTH BIRTHDAY

As we go to press this issue of the Illinois State Medical Society is ninety-nine years of age. The organization was founded in June, 1840. The founders and the original members of the Society have long since crossed the divide. They live with us in our daily practice either in tradition or memory.

Man is not immortal but in a limited sense a society or organization may be. To the individual the years bring wisdom but lessen the ability to profit by it. A medical organization is under no such handicap.

On this, its ninety-ninth birthday anniversary, The Illinois State Medical Society stands on a mountain of accumulative experience and yet greets its membership with a sprightly sense of being younger than ever.

Ninety-nine years! This is an age which most societies find venerable. In the West the next oldest contemporary is the Chicago Medical Society founded in 1850, and three years after the debut of the American Medical Association.

Think back and see if you can reconstruct the life of that time. The population of Chicago in 1840 was 4,470. The death rate for Chicago per 1,000 population was not obtainable; the death rate for Chicago eight years later, or 1849, was 73.8; in 1850 the death rate was 48.96 and

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for 1938, 9.7; for the state of Illinois the death rate for 1840, was correspondingly high; and for 1938, has been similarly reduced.

Illustrative of rapid growth of the central west the population in Chicago in 1840, was 4,410, and of the State of Illinois 416,183. Ten years later or in 1850 the population of Chicago was 29,693; of the State of Illinois 851,470; now there are over 3,600,000 people in Chicago and over 7,941,000 in Illinois.

The Illinois State Medical Society was organized three years before the establishment of Rush Medical College (1843) the first educational institution in Illinois, also three years before Dr. Oliver Wendell Holmes had announced the infectiousness of puerperal fever; and nearly two years before Crawford W. Long discovered ether and two years (March, 1842) before Dr. Long performed the first operation under inhalation of ether, and only seven years before the first use was made of chloroform for the same purpose, and seven years before the organization of the American Medical Association.

Detailed record of the progress of medicine during the last ninety-nine years is epitomized below, we ask our members to read it carefully. In this editorial we refer to a considerable number of items that are of more than passing interest to Illinoisans:

- 1840 Illinois State Medical Society organized.
- 1847 The American Medical Association organized.
- 1850 Devaine discovered the organism of anthrax. Chicago Medical Society organized.
- 1851 Ophthalmoscope invented by Helmholtz.
- 1854 Dr. N. S. Davis began regular publication of reports on health of Chicago.
Dr. Daniel Brainard advocated infiltration of solutions of iodine in treatment of poisoned wounds.
Robert Arthur, D.D.S., demonstrated adhesive properties of gold for dental fillings.
- 1855 Discovery of Trichinae.
First use of quarantine placards in Chicago.
E. S. Cheesbrough, engineer, advised flushing Chicago river with water from Lake Michigan for purification purposes.
- 1858 Czermak invented the Laryngoscope.
- 1859 Chicago Medical College started—the first medical school in America to require graded course of instruction.
Dr. John H. Rauch, in a paper before the Chicago Historical Society, called attention to the danger of intramural interments. As a result the city cemetery on the north side was dedicated as a public park by action of the city council. This was the beginning of Lincoln Park.
- 1860 Sir William Thompson's discovery of the electrometer.
- 1861 Semmelweiss, in Vienna, preached the doctrine of cleanliness as preventive of puerperal fever.
- 1863 Systematic nursing first gained a foothold in this country.
- 1865 Herman Sprengel devised the mercury air pump. Mendel's publication of his laws of Hybridization. (Generally lost sight of until given publicity by): The simultaneous and independent announcement of the same laws by Tzermak in Austria, Codrens in Germany and De Vries in Holland, 1900.
- 1866 Local anesthesia by means of ether spray.
- 1867 Lister, acknowledged his debt to Pasteur, advocated antisepsis in surgery.
Dr. John H. Rauch appointed Sanitary Superintendent of Chicago. First tunnel, two miles long, completed for supply of lake water.
Intubation of stomach by Kussmaul.
Lister's employment of carbolic acid in anti-septic surgery, October 15th.
- 1868 First operation on adenoids by Meyer, Copenhagen, Denmark.
- 1869 First inspection of milk in Chicago.
Extirpation of diseased kidney first performed by Simon.
G. V. Black, D.D.S., demonstrated physical properties of gold as applied to dental fillings.
Discovery of hypnotic properties of chloral-hydrate by C. Liebreich.
- 1870 First milk ordinance in Chicago.
First successful vaginal ovariectomy by T. Gail-lard Thomas.
- 1871 American Public Health Association formed, with John H. Rauch of Chicago as treasurer. G. V. Black, D.D.S., brought out first dental engine.
- 1872 Discovery of latent gonorrhea in the female by Noeggerath.
The introduction of Crede's silvernitate installation for infantile conjunctivitis.
- 1873 First successful removal of renal calculus by Ingalls (Boston), Nov. 8th.
Esmarch's method of bloodless surgery, Dec. 1st.
Golei's staining method of studying structure of the nervous system discovered, practically applied ten years later.
Gull describes myxedema.
Spirillum of relapsing fever discovered by Ober-meier.
- 1874 Salicylic acid isolated by Kolbe.
Polcarpine first recommended as a remedial agent.
Improved staining methods and dried blood smears introduced by Ehrlich after Weigert's bacterial stain with carmin announced in 1871.
Bacillus of leprosy discovered by Hansen.
Repair of lacerated cervix by T. A. Emmett.

- First application of galvanism to uterine myomata.
- 1875 Parasitic ameba in dysentery by Loesch.
- 1876 Establishment of Department of Health, Chicago. Anthrax bacilli first grown in artificial media by Koch.
- Discovery of the resistant anthrax spores by R. Koch.
- First application to treatment of uterine myomata of Batty's operation of oblation of appendages by Trenholme.
- Porro's Cesarean section, with excision of adnexa.
- 1877 Illinois State Board of Health established. License required for practice of medicine in the state. This was the third attempt to regulate the practice of medicine in the State. (Act of 1819, repealed in 1821, established a medical society with authority to license practitioners and to fine members absent from meetings. Act of 1825 was repealed before effective.) At meeting of American Public Health Association in Chicago N. S. Davis read paper on Means of Reducing Infant Mortality. Dr. Henry M. Lyman protested against the placarding of scarlet fever, deploring the waste of cards and tacks, and revolting against the "yellow card nuisance."
- Bacillus of malignant edema described by Pasteur.
- 1878 Eight per cent of hogs in Chicago slaughterhouses found to be infected with trichinae.
- Birth registration in Chicago thought to be approximately complete.
- First successful excision of pylorus by Billroth.
- Plaster of Paris bandages first introduced by Mathyson, Belgian Army Surgeon.
- Improved and popularized by Hubert von de Loo, who survived him 5 years.
- Sayne's gypsum corset for spinal deformities.
- Freund's extirpation of cancerous uterus.
- 1879 Pasteur announces the infective agent in puerperal fever.
- Neisser discovers the Gonococcus.
- Professor Lester Curtis, at Chicago Medical College, made the first systematic use of the microscope in medical education in America.
- Sir William Crooke's announcement that matter is radiant.
- 1880 Discovery of Eberth's bacillus as cause of typhoid fever.
- Discovery of the parathyroid glands by Sandstroem.
- Streptococcus and staphylococcus isolated by Pasteur.
- Iodine introduced into surgery by Moorthof.
- W. D. Miller, D.D.S., established the bacteriological origin of dental caries.
- 1881 First nephropexy by Hahn.
- Valuable modifications of the intraperitoneal method of treatment of the stump.
- Ameba of malarial fever discovered by Laveran.
- Epidemic nature of Poliomyelitis by Medin.
- 1882 May 5, Pasteur demonstrated the protective power against Anthrax, using cultures attenuated by growth in higher temperatures.
- Pasteur demonstrated protective power of cultures attenuated by age against chicken cholera.
- March 24, Koch announced the discovery of the *Bacillus tuberculosis*.
- Saenger's improved Cesarean section.
- Tubercle bacillus discovered by Koch.
- Bacillus of Glanders discovered by Löffler.
- Koch's discovery of the bacillus tuberculosis, May 20th.
- Prophylactic treatment of rabies by injection of virus, Aug. 19th.
- Koch's discovery of the comma bacillus of cholera.
- 1883 Germs of diphtheria and glanders discovered.
- First series of lectures in Illinois given by Prof. Henry Gradle on the germ theory of disease.
- Hemostatic effect of the fluid extract of *hydrastis canadensis*.
- Lawson Tait's operation of extrauterine pregnancy.
- Anti-diphtheritic serum introduced by Behring.
- Diphtheria bacillus discovered by Klebs.
- Introduction of Ichthyol into medical practice by Unna.
- 1884 Bauer, in St. Louis, operated for epilepsy, removing a portion of the skull.
- Metchnikoff discovers the protective power of phagocytes.
- Tetanus bacillus discovered by Nicolaier.
- Gastroenterostomy introduced by Woelfer.
- Antipyrin first prepared by Knorr.
- Miller's employment of cocaine in eye surgery, October 11th. The first reports of the use of cocaine in this country were made by C. R. Agnew, W. O. Moore, and J. L. Minor (Medical Record, Oct. 18, 1884).
- Cocaine introduced as an anesthetic in eye surgery.
- 1885 Dr. F. W. Riley published article in the *Daily News* calling attention to flies as carriers of disease.
- First intubation in Illinois for laryngeal diphtheria performed by Dr. Frank E. Waxham.
- Demonstration by Pasteur of curative action of injections of spinal cord of rabid rabbits attenuated by drying in treatment of hydrophobia. Use of cocaine as local anesthetic.
- Intubation of Larynx by O'Dwyer, Feb. 21st.
- Spinal anesthesia and local medication of the cord discovered by J. Leonard Corning, America.
- 1886 A series of improvements in the technique of the extraperitoneal method of treating the stump by which introligamentous tumors and those deep in the pelvis can be removed by D. J. Price and his pupils.
- Acromegaly is connected with the hypophysis was discussed by Marie.
- Steam sterilization in surgery introduced by V. Bergmann.

- Colon bacillus discovered by Eecherich.
Antifebrin and acetannalid prepared by Cahn and Heppe.
Sulphonal prepared by Baumann.
Salol introduced by Neucki.
Strophanthus recommended as a substitute for digitalis by Fraser.
- 1887 Meningococcus discovered by Weichselbaum.
Bacillus of Malta fever discovered by Bruch.
Howard Kelly's hysterorrhaphy.
Vaginal hysterectomy of cancerous uterus by Mary Amanda Dixon Jones.
- 1888 McEwen of Glasgow performed laminectomy for spinal paralysis.
Methods for making the stump intraabdominal but extraperitoneal, Polk. 1890, Kelly; 1890, Byford; 1892, Bear.
Discovery of bacterial powers of blood serum by Nuttall.
Total abdominal extirpation of myomatous uterus, by use of clamp (first resuscitation in America of the operation since those of Freund had been abandoned), Lewis.
- 1889 Gueniot suggested the section of skull for idiocy.
Operation performed by Lannelongue in Paris, Keen of Philadelphia, and Wyeth of New York.
Sanitary District of Chicago established.
Total abdominal extirpation, fastening stump of vagina to abdominal incision, for prolapse, Polk.
First separate ligation of uterine arteries in their continuity and total extirpation of this method, Stimson.
Introduction of cystoscope by Nitze.
Operations on spinal cord by Gowers and Hersley.
- 1890 Discovery of the antitoxin of diphtheria by Behring in Germany and Kitasato in Japan, with its curative and protective powers.
Antitoxin of tetanus discovered.
The non-fatigability of nerve-tissue demonstrated by Bowditch.
Koch's announcement of the preparation of tuberculin, Aug. 9th.
Discovery and experimental use of tetanus and diphtheria anti-toxin announced Dec. 6th.
- 1891 U. S. meat inspection law passed.
Lumbar punctures used in diagnosis of cerebro-spinal meningitis.
Surgical asepsis in surgery introduced by V. Bergman.
Michel's clamp and other devices for the closure of operation wounds.
First paper on lumbar puncture and study of cerebro-spinal fluid, by Quinckle.
Study of the ductless glands inaugurated by establishment of the fact of internal secretions, by Brown-Sequard.
Neuron theory of Eaklenmeyer.
- 1892 Study of metabolism, led by V. Noorden.
Invention and use of Murphy button, Medical Record, 1892, vol. 42, page 665.
- 1893 Total abdominal extirpation of the uterus with suppurating appendages, as a matter of election, Baldy, Krug, Polk.
Para colon and para typhoid bacilli described by Gilbert.
Transmission of Texas fever by cattle tick reported by Smith & Kilbourn.
Blastomycosis described by Gilchrist.
Heliotherapy dates back slightly over 50 years, but was first placed on a scientific basis by Finsen.
- 1894 Discovery of the photographic power of the X-ray.
Finlay's theory of the relation of the mosquitoes to the spread of yellow fever, Nov. 24th.
Infiltration anesthesia introduced by Schleich.
Bacillus of Bubonic plague discovered by Kitasato and Yersin.
Sauerbach's Pneumatic Cabinet an underpressure contrivance introduced.
Direct laryngoscopy introduced by Kirstein.
Eucleation of the stump as well as the myoma, by use of a serrated gouge, without severing the uterine arteries, Eastman.
Total extirpation of uterus in cases of extra-uterine pregnancy, where the tube which is not pregnant is diseased, Krug.
- 1895 Recognition of the doctrine of "internal secretions," first announced by Sajous in 1873 and ridiculed.
First diphtheria antitoxin issued by the Chicago health Department, Oct. 5.
William Conrad Roentgen, discovery of the X-ray.
Relation of mosquitoes to the spread of malaria, Sept. 21.
Discovery of bacteriolysis by Pfeiffer.
- 1896 Duehrssen's method of vaginal Cesarean section.
Discovery of bacterial agglutination by Gruber.
Widal-Sicard agglutination test for typhoid fever.
First case of heart suture by Farina.
Murphy's successful circular anastomosis of blood vessels.
- 1897 Recognition of action of precipitin and agglutinin in sero-analysis.
Haffkine's serum used successfully against the bubonic plague in India.
Rehn first successfully sewed a wound of the heart.
G. W. Crile's combination of different drugs on the basis of his experimental research into surgical shock (Cartwright Prize Essay).
American Medical Association incorporated in Illinois, Sept. 25.
Dysentery bacillus discovered by Shiga.
Discovery of bacterial hemolysis by Bordet.
Fischer synthesized caffeine, theobromine, xanthin, guanin and adenin.
Chicago Medical Society incorporated.

- 1898 Ronald Ross demonstrates Anopheline Mosquitoes as essential agents for the spread of malaria. (This discovery depended upon, and added confirmation of, the discovery of Manson in 1876 that filiriasis is spread by *Culex* mosquitoes and the discovery of Leveran in 1880 of the plasmodia of malaria. It also revolutionized public health work.)
Invasion of hookworm through skin demonstrated.
Heroin introduced by Dreser.
Direct bronchoscopy introduced by Killian.
Demonstration of hookworm infection by Loos.
Differentiation between human and bovine tubercle germs by Smith.
Action of digestive glands investigated by Pabloff.
- 1899 Finley's theory of transmission of yellow fever by mosquitoes, conclusively proved by U. S. Army Commission.
The clinical activation of the sea-urchin's egg by Jacques Loeb startled the scientific world.
- 1900 Discovery that the presence of *Stegomia* mosquitoes is essential for the spread of yellow fever.
Rats were found to be disseminators of bubonic plague with the aid of fleas.
Chicago Drainage Canal opened.
Alderman William Hale Thompson, by resolution in city council, secured the first public playground for Chicago.
Discovery of the specific action of guaiacol in malaria by Charles J. Whalen.
U. S. Army commission confirms theory of the relation of mosquitoes to the spread of yellow fever, Nov 3rd
Paraffin injection first employed by Gersunny.
Wertheim's radical operation for cancer of the uterus.
- 1901 The indications for early laparotomy in appendicitis and McBurney's point were first emphasized.
Erepsin discovered by Cohnheim.
Adrenalin, the active principle of the suprarenals, was isolated by Takamine.
Cosmetic employment of paraffin injections, April 13th.
- 1902 Demonstration of agency of the tsetse fly in spread of the African sleeping sickness—trypanosomiasis.
Carrel's method of vascular anastomosis and tissue transplantation.
Artificial respiration described by Matas.
Madam Curie's discovery of radium, May 3rd.
Discovery of the dysentery bacillus as a cause of summer diarrhea of infants in this country, Sept. 13th.
- 1903 Illinois Medical Society incorporated "to promote science and art of medicine."
Wright's recognition of "opsonins."
Atoxyl found specific for African trypanosomiasis, when given in efficient doses. Trypanosomes rendered immune by small doses.
Recognition that beriberi was result of use of rice which had been deprived of its outer coating, containing vitamins; first affirmed in 1880 by Eikman, and independently by Braden in 1893.
Country dairy inspection inaugurated by Chicago.
Parasite of sleeping sickness discovered by Dutton and Ford.
Transmission of the diseases by the tsetse fly shown by Bruce.
Control of hook-worm disease in Porto Rico by Ashford.
A four year course was compulsory in 144 medical schools. Women are admitted to medical schools and State examinations in America, England, Germany, France, Switzerland, Spain, Sweden and Russia.
Veronal introduced by Fisher and v. Mehring.
- 1904 Important clinical and experimental contributions to the physiology of the thyroid and parathyroid were published by Pineles.
- 1905 Discovery by Schaudinn that *Treponema pallidum* is causative organism in syphilis.
Discovery of anaphylaxis, or recognition thereof. Novocain discovered by Einhorn.
Spirocheata pallida discovered by Schaudinn.
- 1906 First systematic bacterial inspection of Chicago milk from dairy farms.
Wassermann reaction described, June 2nd.
- 1907 Clyde Snook, Edwin W. Kelly and G. Herbert White, three Americans, developed high tension transformer for X-Ray tubes.
- 1908 Adoption of dairy cards in Chicago Department. Ordinance for pasteurization of milk not from tuberculin tested cows.
10,000 cows tuberculin tested.
City discontinues registration of births and deaths.
Lawrence avenue conduit completed (Chicago).
Koch's investigation of African fever.
Bacillus of pertussis discovered by Bordet and Gengou.
- 1909 Discovery of the louse as carrier of typhus fever. State of Illinois assumes distribution of diphtheria antitoxin.
Under the Glackin law Chicago votes to establish a tuberculosis sanitarium.
Forster's operation for locomotor ataxia.
Announcement by Ehrlich's side-curtain theory and his introduction of salvarsan.
- 1910 First report of American cases in which salvarsan was given in syphilis, made by M. S. Kakels, Sept. 24th.
Fresh air treatment for tuberculosis.
Serotherapy endocrine medication.
Loos showed that the hook-worm larvae penetrate the skin.
Flexner's experimental production of poliomyelitis.

- 1911 Cushing described dyspituitarism.
Peyton Ross' successful transmission of sarcoma with filterable virus.
- 1912 Chlorination of Chicago water supply begun.
Publication of studies of Creel and Cannon on general physiologic action of adrenin.
Plasmodium of malaria, cultivated in the test tube, by Bass.
Intramedullary affections of spinal cord rendered accessible by Elsberg.
Abderhalden's announcement of the ferment-reaction in the diagnosis of pregnancy.
- 1913 Sex gland implantation Lespinasse.
- 1914 Testicle grafting for improvement of sex function, skin, circulation, arterio sclerosis, Lydston.
- 1915 Sir David Bruce's investigations of causes of sleeping sickness and Malta fever awarded by Leeuwenhoeck medal.
- 1917 State Board of Health of Illinois abolished.
State Department of Registration and Education created and given jurisdiction over practice of medicine and allied sciences.
Illinois admitted to Federal Registration "Area for Deaths."
- 1922 Discovery of Insulin by Sir Frederick Banting of Toronto.

Since the founding of the Illinois State Medical Society the great plagues of the past no longer mow down our citizens; infant and maternity mortality have been greatly lowered; specific remedies, such as quinine, salvarsan, sulfapyridine, sulfanilamide, insulin, and the curative and prophylactic sera, have been discovered. The advances in surgery have been unparalleled, and the psychiatrists take our minds apart, polish up the wheels and return many victims of mental disease to useful citizenship.

Of the three great agencies that limited population when the society was young—famine, pestilence, and war—two are largely under control, and only war is functioning in the same old efficient manner.

Hospital care for the sick has been universally established with resulting saving of many lives. Few of the younger and middle-aged men in the profession today realize that many of their older colleagues who are their competitors, went through the horse-and-buggy, kitchen table stage of medicine and surgery.

Scientific discoveries and application have doubled the life expectancy in the past fifty years and the population of the world in the last ninety-nine years—a greater increase than in the preceding history of the world.

In 1840, at the time our society was established, the old gig and gray Dobbin, saddle bags, sulphur and molasses and the great horn spoon were the doctor's vade mecum. Contrast this condition with the present day method of transportation and treatment of the sick. The automobile and the aeroplane have relegated old Dobbin to the rear. Newer and more successful medication and surgery have supplanted the cruder methods.

Men and causative forces have achieved closer acquaintance in the ninety-nine years that have elapsed

since the inception of the Illinois State Medical Society. Nine centuries of progress have been attained through those ten decades. With a similarly continuous pace, perhaps the light of the millenium may be unfolded to the world before the coming ninety-nine years have ended.

Civilization has been maintaining an excellent balance along lines economic, physiographic, artistic, philosophic, scientific and humanitarian. Without egotism the medical profession may account itself a vital factor in the motivation of these ten growing decades. Doctors of the world have played a conspicuous part in unfolding the wonders of scientific progress that have been revealed and have helped to keep them unlocked for daily use.

Owing to self-sacrificing labors of medical men during the last ninety-nine years, epidemic and endemic affections, such as malaria, typhoid fever, smallpox, yellow fever, typhus fever, cholera and hook worm diseases have been banished where civilization extends. Through the achievement of bacteriologists and clinicians diphtheria and syphilis are preventable and curable, and meningitis and many infections are soon to cease being the dread of the community. By preventing communicable disease and by reducing the high mortality that prevailed ninety-nine years ago, millions of people are alive today who otherwise would have gone to untimely graves.

Passing the subject of medicine, many events of vital interest to mankind have occurred since this Society was founded. We ask you to think back and to picture in your mind the domestic facilities in use in 1840. Here is one little item that will assist you: When the Society was founded the sewing machine had not been brought out. Visualize a nation of homes without sewing machines and you will have a dim idea of the changes our organization has seen.

The sewing machine is only one of the utilities that you will find lacking in the industries if you think back to 1840. Telephones, automobiles, aeroplanes, electric cars, will be left behind at the very start of the backward journey. Telegraphs had not yet been installed; the first line ran between Annapolis and Washington. Cables, electric subways, elevated railways, Pullman sleepers, national railway system, ready to wear clothing, the iniquitous delicatessen, modern plumbing from kitchen sinks to Oscar Hammerstein's bathtub drain pipe, the submarine, smokeless gun powder, electric light, wireless telegraphy, great telescopes that have made astronomy's readings a fireside companion in thousands of homes and educational institutions, typewriters, cotton gins, motorcycles, passenger elevators, moving pictures, gas ranges and a million details and conveniences of modern building and construction have been brought forth during the last ninety-nine years.

Farm labor is revolutionized by the invention of machinery to perform heavy work better than human hands or brute strength. The house of McCormick, headed by the late Cyrus McCormick, who invented the reaper and threshing machine, must be credited with this liberation.

When our Society was established anthracite coal was still an experiment as a fuel, and whale oil was to be reckoned with as an illuminant.

Since 1840 the United States has nearly doubled in age and quadrupled in point of area, trade, wealth and population. From a struggling adolescent it has become a mature woman and a big sister to the world at large.

In 1840 railroad mileage in the United States was about 5,000 miles for the twenty-six States then in the Union. Today it approximates 300,000 miles and traverses forty-eight States. When the Society was begun the estimated area of those twenty-six States was 940,000 square miles and the population less than 20,600,000; in 1938 the United States area was 3,026,789 square miles and the population was more than 130,000,000. In 1840 the national wealth of the country was \$5,000,000,000; in 1938 it was over \$300,000,000,000. The annual production of wealth in 1840 was \$1,000,000,000; in 1938 it was \$100,000,000,000; foreign trade in 1850 was \$250,000,000; by 1920 it was \$9,400,000,000 and by 1938 it had again doubled. In 1840 the center of population of the United States was 23 miles southwest of Parkersburg, W. Va.; in 1938 it was at Bloomington, Ind.; perhaps in 1940, it will be shown to be located about Chicago.

A host of happenings which we now look upon as distant history had not yet occurred when the Society first made its appearance. Zachary Taylor was President of the United States. He died July 9, 1850. Abraham Lincoln was practicing law and vowing that if he ever got the chance to hit slavery he would hit hard. But the Dred Scott decision, which was to prove the truth of Lincoln's maxim that the nation could not exist half slave and half free, was merely two decades in the future, and it is not likely that even in his wildest dreams the ex-rail splitter fancied himself in the White House.

When the Society began its career Louis Phillipe was on the throne of France; Germany was a welter of quarreling principalities, of which already Prussia seemed the strongest. Italy was a mere "geographical expression," divided among fourteen different states and provinces, and two of the fairest were under the ever-cursed dominion of the Hapsburgs. The revolution of 1848 had not yet dawned. The Irish famine lay below the horizon, the Turk ruled Roumania, and Japan was yet the Hermit Kingdom, on whose sacred shores no foreigner was allowed. English ships sailed to India by way of the Cape of Good Hope. Australia was known only as a convict's settlement.

Other red letter years during the existence of the Illinois State Medical Society include the French Revolution; gold had not been discovered in California; Australia had this good fortune in 1851; Louis Napoleon was made emperor of France in 1852; Crimean war began in 1853; Commodore Perry's opening of Japan, 1854; end of Crimean war, 1855; the great mutiny in India, 1857; the Dred Scott decision, 1857, and the rumbling of the civil war that was to come; first Atlantic cable message, August 4, 1857; secession of South Carolina, December 20, 1860; eman-

cipation of Russian serfs, 1861, and in the United States civil war, 1861; Lincoln's emancipation proclamation and the ending of slavery, 1863; surrender of confederate army, April 9, 1865; assassination of President Lincoln, April 14, 1865; Atlantic cable laid, 1866; Dominion of Canada established, 1867; Franco-German war, 1870; France proclaimed a republic, 1873, three years after the capitulation at Sedan; Chicago burned, 1871; Mt. Vesuvius erupted, 1872; first elevated train run in New York in 1878; Bartholdi Statue of Liberty presented by France to the United States, July 4, 1884; Brazil became a republic, 1889; Cinema invented, 1894; Cuban revolution, 1895; Spanish American War, 1898; New York subway opened, 1904; North Pole discovered, April 6, 1910; Republic of Portugal established same year; United States postal savings bank system founded, 1911; South Pole discovered, December 14, 1911; China proclaimed a republic, 1911; the Peace Palace at the Hague dedicated, 1913; starting of the world's war, 1914; Panama canal opened, August 15, 1914; China restored as a monarchy, 1915; Russia rid herself of the czar, 1917; United States entered the world's war, 1917; termination of the world's war, November 11, 1918.

Perhaps the greatest industrial and social advances in the nearly five score years just ended have been recognition of the value of women and children to the State, and the practical granting of franchise to women over 21 years of age. Will the changes borne by the next ninety-nine years be as strange? Since history is merely a repetition of emotions and events, we have every reason to believe that progress will surprise itself during the next ten decades. Ninety-nine years from now we will stand, by comparison, where 1840 stands today.

A. M. A. UNANIMOUSLY DISAPPROVES PENDING WAGNER HEALTH BILL

Without a dissenting vote the House of Delegates of the American Medical Association at its St. Louis meeting in May disapproved of the Wagner Health Bill now pending in Congress "as inconsistent with the fundamental principles of medical care established by scientific medical experience and therefore contrary to the best interests of the American people. The report of the reference committee on the Wagner Health Bill is as follows:

Your reference Committee has carefully considered the Bill designated as S.-1620, "A Bill to provide for the general welfare by enabling the several states to make more adequate provision for public health, prevention and control of disease, maternal and child health services, construction and maintenance of needed hospitals and health centers, care of the sick, disability insurance, and training of personnel; to amend the Social Security Act; and for other purposes."

This bill was introduced by Senator Robert A. Wag-

ner of New York, February 28, 1939, and is commonly referred to as the Wagner Health Bill. The bill itself provides that, if it be enacted, it may be cited as the "NATIONAL HEALTH ACT OF 1939." The purposes of the bill are sufficiently stated in the title, but the bill itself must be recognized as a proposed amendment to the Social Security Act of 1935. The bill is intended to make effective a national health program recommended by the Interdepartmental Committee to coordinate health and welfare activities.

The House of Delegates of the American Medical Association at its special session in Chicago, September 16, 1938, considered the National Health Program and adopted resolutions based on five recommendations contained in the program. It is important that this fact be borne in mind, for the bill, which drafted long after these resolutions were adopted and at a time when the resolutions were presumably known to the proponents of this measure, does not recognize either the spirit or the text of these resolutions. Any criticism of this bill by the Association is not to be construed, therefore, as a repudiation of any of the principles adopted by the 1938 Special Session of the House of Delegates.

ANALYSIS OF THE BILL

S. 1620 proposes to amend Title V. of the Social Security Act—Grants to States for Maternal and Child Welfare—and Title VI—Public Health Work and Investigations—and proposes to add to the Social Security Act certain new titles: namely, Title XII—Grants to States for Hospital and Health Centers; Title XIII—Grants to States for Medical Care, and Title XIV—Grants to States for Temporary Disability Compensation.

Already some individuals and organized groups in the United States have appeared before the Senate Subcommittee which has this bill under consideration and have urged its immediate enactment. Although the stated objectives of the Wagner Health Bill are generally recognized as desirable, your committee cannot approve the methods by which these objectives are to be attained.

Repeatedly, physicians and all other qualified professional groups have recommended the coordination and consolidation of the health activities of the Federal Government. The Wagner Health Bill leaves existing and proposed preventive and curative medical services widely scattered through several federal agencies.

This bill does not in any way safeguard the continued existence of the private practitioners who have always brought to the people the benefits of scientific research and treatment.

It does not provide for the use of the thousands of vacant beds now available in hundreds of church and community general hospitals.

The Wagner Health Bill proposes an extensive program in the field of "health, diagnostic, and treatment centers, institutions and related facilities," without defining their functions.

This bill proposes to make federal aid for medical care the rule rather than the exception, since it does

not specifically limit its benefits to persons unable to pay for adequate medical care.

The Wagner Health Bill does not recognize the need for suitable food, sanitary housing and the improvement of other environmental conditions necessary to the continuous prevention of disease and promotion of health.

This bill insidiously promotes the development of a complete system of tax supported governmental medical care, thus undermining and debasing present standards of medical services.

The House of Delegates in September 1938 urged compensation for the loss of wages during sickness. The Wagner Health Bill deviates from this suggestion by proposing to provide medical services in addition to compensation.

The Wagner Health Bill would authorize an enormous expansion of governmental medical services and therewith ultimately unlimited appropriations for its health program. The funds necessary would be so great as to increase still further the present burdensome general taxation.

The Wagner Health Bill provides for supreme federal control. Rules and regulations must be promulgated by the Chief of the Children's Bureau in the Department of Labor, the Surgeon General of the Public Health Service, The Federal Emergency Administrator of Public Works, and the Social Security Board. These federal agents are given authority to disapprove plans proposed by the individual states.

The House of Delegates at its September 1938 Session approved the expansion of preventive and other medical services when the need could be shown. The Wagner Health Bill prescribes no method for determining the nature and extent of the needs for which it proposes allotments of funds.

The provisions in the Wagner Health Bill that have never been considered by the House of Delegates are: the authorization of appropriations for studies, investigations and demonstrations, and the creation of federal and state advisory councils.

The Wagner Health Bill, as judged by the considerations that have been here presented, is inconsistent with the fundamental principles of medical care established by years of scientific professional medical experience, and in the opinion of your committee it is, therefore, contrary to the best interests of the American people.

For years the health of the people of the United States, as measured by sickness and death rates, has been better than that of most foreign countries, and this improvement has been continuous. The fortunate health conditions in the United States cannot be dissociated from the standards and methods of medical practice that have prevailed under the present system of medical practice.

No other profession and no other organization has done more for the prevention of disease, the promotion of health and the care of the sick than have the medical profession and the American Medical Association. No other groups have shown more genuine sympathetic interest in human welfare.

The contribution of the individual members of the

American Medical Association to medical care is universally regarded as monumental in total volume. The contribution of the American Medical Association, through a program of medical education and the activities of its numerous councils which safeguard medical service, give abundant proof of interest in the problems of the national health. It has given continued consideration to these problems, whereas others show concern with these proposals because of a present but, it is to be hoped, a temporary need for relief. These are the groups which request revolutionary legislative action as indispensable for the extension and further diffusion of health facilities.

In view of its record and in consideration of the responsibility which American social history and the nature of medical care have imposed on the medical profession, the American Medical Association would fail in its public trust if it neglected to express itself unmistakably and emphatically regarding any threat to the nation's health and well-being.

The American Medical Association must therefore, speaking with professional competence, oppose the Wagner Health Bill.

Nevertheless, recognizing the soundness of the principles stated in the resolutions adopted by the House of Delegates at its special Session in 1938, namely, the expansion of preventive medicine and public health where need can be shown, the extension of medical care for the indigent and the medically indigent where the need can be demonstrated, with local determination of needs and local control of measures to supply these needs, your committee would urge the development of a mechanism for meeting these needs within the philosophy of the American form of government and without damage to the quality of medical services.

This question, as it relates to the aid to be given by an individual state to its own counties, municipalities or other local political units, is not immediately before this Association. The answer is to be found in the individual state constitutions and state statutes. Counties, townships and municipalities are creatures of the individual states and can be molded and guided by the state for its own purposes. The individual state, itself, is not a creature of the Federal Government. The Federal Government is, as a matter of fact, a creature of the individual states.

The fundamental question is how and when a state should be given financial aid by the Federal Government out of the resources of the states as a whole, pooled in the Federal Treasury. Disasters, such as floods, dust storms, fire and epidemics, have long been recognized as justifying such Federal aid. No state or person has ever been heard to object to the use of funds out of the Federal Treasury for such purposes. No one has ever proposed, however, that because Federal aid is extended under such conditions to a state in distress, a corresponding aid must be extended to every other state, regardless of its need. Nor has anyone ever been heard to say that Federal aid to a state in distress, because of flood, dust storm, fire or epidemic, shall not be extended, unless and until the suffering state has produced from its own treasury a stated amount of

money to aid in affording the relief. The development of such bizarre thinking may be traced to those who have originated within comparatively recent years the granting of Federal subsidies—sometimes referred to as "grants in aid"—to induce states to carry on intra-state activities suggested frequently in the first instance by officers and employees of the Federal Government. The use of Federal subsidies to accomplish such federally determined activities has invariably involved Federal control. Any state in actual need of financial aid from the Federal Government for the prevention of disease, the promotion of health and the care of the sick should be able to obtain aid in a medical emergency without stimulating every other state to seek and to accept similar aid and thus to have imposed on it the burden of Federal control.

The mechanism by which this end is to be accomplished, whether through a Federal Agency to which any state in need of Federal financial assistance can apply, or through a new agency created for this purpose or through responsible officers of existing Federal Agencies, must be developed by the Executive and the Congress who are charged with these duties. Such method would afford to every state an agency to which it might apply for Federal assistance to enable it to care for its own people without involving every other state in the Union or the entire government in the transaction, and without disturbing permanently the American concept of democratic government.

SUMMARY

1. The Wagner Health Bill does not recognize either the spirit or the text of the resolutions adopted by the House of Delegates of the American Medical Association in September 1938.

2. The House of Delegates cannot approve the methods by which the objectives of the National Health Program are to be obtained.

3. The Wagner Health Bill does not safeguard in any way the continued existence of the private practitioners who have always brought to the people the benefits of scientific research and treatment.

4. The Wagner Health Bill does not provide for the use of the thousands of vacant beds now available in hundreds of church and community general hospitals.

5. This Bill proposes to make federal aid for medical care the rule rather than the exception.

6. The Wagner Health Bill does not recognize the need for suitable food, sanitary housing and the improvement of other environmental conditions necessary to the continuous prevention of disease.

7. The Wagner Health Bill insidiously promotes the development of a complete system of tax supported governmental medical care.

8. While the Wagner Health Bill provides compensation for loss of wages during illness, it also proposes to provide complete medical service in addition to such compensation.

9. The Wagner Health Bill provides for supreme federal control: federal agents are given authority to disapprove plans proposed by the individual states.

10. The Wagner Health Bill prescribes no method

for determining the nature and extent of the needs for preventive and other medical services for which it proposes allotments of funds.

11. The Wagner Health Bill is inconsistent with the fundamental principles of medical care established by scientific medical experience and is therefore contrary to the best interests of the American people.

12. The fortunate health conditions which prevail in the United States cannot be disassociated from the prevailing standards and methods of medical practice.

13. No other profession and no other group have done more for the improvement of public health, the prevention of disease and the care of the sick than have the medical profession and the American Medical Association.

14. The American Medical Association would fail in its public trust if it neglected to express itself unmistakably and emphatically regarding any threat to the national health and well being. It must, therefore, speaking with professional competence, oppose the Wagner Health Bill.

15. The House of Delegates would urge the development of a mechanism for meeting the needs for expansion of preventive medical services, extension of medical care for the indigent and the medically indigent, with local determination of needs and local control of administration, within the philosophy of the American form of government and without damage to the quality of medical service.

16. The fundamental question is how and when a state should be given financial aid by the Federal government out of the resources of the states as a whole, pooled in the Federal Treasury.

17. The bizarre thinking which evolved the system of Federal subsidies—sometimes called “grants-in-aid”—is used to induce states to carry on activities suggested frequently in the first instance by officers and employees of the Federal government.

18. The use of Federal subsidies to accomplish such Federally determined activities has invariably involved Federal control.

19. Any state in actual need for the prevention of disease, the promotion of health and the care of the sick should be able to obtain such aid in a medical emergency without stimulating every other state to seek and to accept similar aid, and thus to have imposed on it the burden of Federal control.

20. The mechanism by which this end is to be accomplished, whether through a Federal agency to which any state in need of Federal financial assistance can apply, or through a new agency created for this purpose or through responsible officers of existing Federal agencies, must be developed by the Executive and the Congress, who are charged with these duties.

21. Such a method would afford to every state an agency to which it might apply for Federal assistance without involving every other state in the Union or the entire government in the transaction.

22. Such a method would not disturb permanently the American concept of democratic government.

THE 1939 ANNUAL MEETING

The 1939 annual meeting of the Illinois State Medical Society was held in Rockford, May 2, 3, 4, and it was one of the best meetings the Society has ever held. The attendance was fine even though the meeting was held two weeks before the annual meeting of the American Medical Association, and this no doubt kept many physicians from the central and southern parts of the state away.

All meetings were conducted as scheduled, the programs were attractive, all well attended and there was an unusual interest shown in the various section meetings. The technical exhibit was the largest ever displayed at a down state meeting, and once more the members were interested in the developments during the past year on the part of the many concerns which supply the many needs of the medical profession.

The many scientific exhibits attracted unusual interest, and illustrated the fact that scientific exhibits are an important feature of the annual meeting. The Hall of Health, displayed in the large Rockford Armory attracted much attention on the part of the people of Rockford and surrounding territory. Large crowds were present each day while the health exhibits were on display.

An interesting feature in connection with the Hall of Health was the poster and essay contest for high school students. The committee on awards had a difficult job to determine which of the many entrants to the contest should receive the awards, but it was quite obvious that the judges selected for the purpose used good judgment in making their selections. At the opening meeting of the Society, the recipients of the six cash awards were present, and received cash prizes from the Chairman of the Council, Dr. E. P. Coleman.

It is interesting to note that on several occasions during the meeting, there were six sections meeting at the same time, and all well attended. The several joint meetings of two or more sections demonstrated the popularity of this arrangement.

The House of Delegates held the usual two meetings, and many important matters were referred to the reference committees for hearings and study, and were all acted upon at the second meeting. Complete transactions of the House of Delegates will appear in the July

ILLINOIS MEDICAL JOURNAL.

At the closing meeting of the House of Delegates on Thursday morning, the following were elected to office, committee appointments or to membership in the Council.

President-Elect, J. S. Templeton, Pinckneyville.

First Vice-President, J. S. Lundholm, Rockford.

Second Vice-President, F. H. Muller, Chicago. Secretary, Harold M. Camp, Monmouth.

Treasurer, A. J. Markley, Belvidere.

Council for Third District, L. E. Day, Chicago.

Councilor for Sixth District, T. B. Knox, Quincy.

Councilor for Ninth District, Andy Hall, Mt. Vernon.

Councilor for Tenth District, Henry G. Horstman, Murphysboro.

Public Relations Committee, W. S. Bougher, Chicago; Fred H. Muller, Chicago; H. W. Woodruff, Joliet.

Medical Legislation Committee, John R. Neal, Springfield; Mather Pfeifferberger, Alton; Robert H. Hayes, Chicago.

Medico-Legal Committee, Oscar Hawkinson, Chicago; T. B. Williamson, Mt. Vernon.

(Elected for three years)

Medical Education and Hospitals Committee, N. S. Davis, III, Chicago; W. R. Marshall, Clinton; H. O. Munson, Rushville.

Relations to Public Health Administration Committee, E. H. Blair, Chicago; Andrew Gausevoort, Chicago; Thomas Meany, Chicago; L. O. Frech, Decatur; C. G. Pool, Compton.

Delegates to American Medical Association, Chas. B. Reed, Chicago; L. O. Frech, Decatur; W. E. Kittler, Rochelle, C. E. Wilkinson, Danville.

Alternate Delegates to American Medical Association, Frank L. Brown, Chicago; E. H. Weld, Chicago; C. W. Carter, Clinton; E. P. Coleman, Canton; (for one year), Mather Pfeifferberger, Alton.

Officers of Scientific Sections for 1940

Section on Medicine, E. M. Stevenson, Chairman, Bloomington; W. O. Thompson, Secretary, Chicago.

Section on Surgery, Frederick Christopher, Chairman, Evanston; Charles L. Patton, Secretary, Springfield.

Section on Eye, Ear, Nose and Throat, Frank

W. Brodrick, Chairman, Sterling; Thomas D. Allen, Secretary, Chicago.

Section on Public Health and Hygiene, Loran E. Orr, Chairman, Springfield; H. A. Orvis, Secretary, Wilmot.

Section on Radiology, Warren E. Furey, Chairman, Chicago; Harry W. Aekemann, Secretary, Rockford.

Section on Pediatrics, H. Wm. Elghammer, Chairman, Chicago; Orville Barbour, Vice Chairman, Peoria; Bert I. Beverly, Secretary, Oak Park.

Section on Obstetrics and Gynecology, W. A. Malcolm, Chairman, Peoria; Herbert E. Schmitz, Secretary, Chicago.

Secretaries' Conference, A. R. Brandenberger, Chairman, Danville; A. R. Bogue, Vice Chairman, Rochelle; Carl E. Clark, Secretary, Sycamore.

Report of Committee on Awards

Silver Medal: H. E. Fisher, L. H. Ruttenberg, J. L. Bailen, and E. C. Fisher, "Night Hazards of Driving."

Bronze Medal: Rockford Police Department: "Accident Prevention, Accident Investigation, and First Aid Bureau."

Bronze Medal: Department of Health, Rockford Board of Education, "School Health in Rockford."

Certificates of Merit

Department of Public Health, Rockford: "The Story of the Pneumococcus."

The Chicago Heart Association: "Prevention of Heart Disease Is Better than Cure."

The Rockford Lions Club: "Sight Conservation and Blind Activities."

St. Anthony's Hospital, Rockford: "Pathological Specimens."

The Pittman Moore Company: "Medical Superstitions."

The Rockford Hospital Pathological and Nursing Exhibit.

Scientific Exhibit

Silver Medal: Departments of Pathology and Medicine of the University of Chicago and of Northwestern University and the Department of Public Health of the State of Illinois. "Pneumonia. Pathology, Pathogenesis, Modern Management, Control."

Bronze Medal: D. A. Bennett, Coleman Clinic—"Mesenteric Lymphadenitis."

Bronze Medal: T. E. Walsh, P. R. Cannon—"Some Effects of Commonly Used Nasal Medications on the Lungs."

Certificate of Merit

H. E. Mock and J. L. Lindquist: "Skull Fracture and Cerebral Injuries."

R. B. Malcolm, L. Rossiter, E. Palmer, W. H. Cole: "Surgical Pathology of the Colon and Rectum and its Relation to Operative Procedures."

R. E. Brackin: "Uretero-Intestinal Anastomosis or Anastomosis of the Ureter with the Colon."

P. J. Melnick: "Changes in Tumors Implanted with Radon Seeds."

C. M. Epstein: "Fractures of the Facial Bones."

Illinois Radiological Society: "Gastro-Intestinal X-Ray Studies."

POLITICAL MEDICINE AND PUBLIC HEALTH. BY HAVEN EMERSON, M.D.

An internationally recognized authority in Mid-Spring Issue, 1939 "AMERICA'S FUTURE" states the case against political medicine. Dr. Emerson is Professor of Public Health Administration at Columbia, former Health Commissioner of New York City and is a grand-nephew of Ralph Waldo Emerson.

The assumptions upon which the proposed national health program is based are essentially fallacious.

In the first place it is assumed that the health of the people of the United States is neglected and is of low order. The record is consistently to the contrary effect—in fact, I believe it would be impossible to find in the history of any country such an experience as we have had since 1929. There is no exception to the steady annual improvement in the national health from 1929 to 1939. There has never been a period when so many people under one government have been so effectively protected against the major hazards of all the preventive diseases with which we have acquaintance. This is not merely in one particular disease, such as tuberculosis; it runs all thorough the picture.

It cannot be an accident that we should have not only the lowest general death rate, but the lowest maternal mortality, the lowest infant mortality, the lowest tuberculosis, the lowest typhoid,

the lowest diphtheria rate ever in the history of our country. There has been no exception to this continual improvement in health and it can be said that no 130,000,000 people under one government in the history of the world has such a record of freedom from preventive diseases as the United States now enjoys. And yet we are assuming that to go forward, it is necessary for us to undertake an entirely new project in public health.

There is a fallacy in the assumption that there is a mysterious need for reconsidering the methods by which the present progress has been attained. It is assumed that 40,000,000 people in the United States are unable to get—in fact do not get—the medical care they need. The evidence of physicians, medical institutions and the widespread human experience of all of us is to the effect that those who need medical care and want it are receiving it—except where poverty and sparsity of population groups has failed to attract physicians to settle among them.

Again, it is assumed that large expenditures of federal money will make great improvements in the health and care of the sick while skill, economic and social inequalities of serious degree remain uncorrected.

Experience suggests that expenditures for health and the care of the sick in the United States have been increasing at as rapid a rate as the several states, cities and counties can afford and as fast as trained personnel can be had to carry out the technological procedures. In fact, under the pressure of the Social Security money, commissioners of health of the various states of the Union have had to enlist for their forces persons they know are ill-prepared to carry this extended load. There has been more money available to hire people to go into public health than there are trained persons to carry out the intent of the Social Security Act at present.

Whatever money is granted from Washington to the States has been first taken out of the states and to that degree has deprived these states and their local health jurisdictions of resources which they know better how to spend for their benefit than do the officers of the federal government.

It is assumed there is a spontaneous, informed and wide-spread demand by the laity, particularly unemployed and unemployable and those

on relief and subsistence level wage earners, for a quality of medical care and health protection not now available to them. This assumption, I believe to be false. The record would point to ingenious, persistent organized propaganda and costly federal publicity and promotion to create a sense of dissatisfaction with the present medical services for the indigent and low income groups, who almost without exception have shown grateful appreciation for and confidence in the care provided through existing administrative institutions and agencies for the sick. No one can have contact with the sick as they come to us willingly, hopefully, confident and expectantly without knowing that they are grateful and satisfied that they are getting the best that can be offered. The best that can be had.

There are areas to which physicians and institutions have not gone and thus must be provided for by new or extended assistance to the location of physicians in these parts.

It is assumed that the health officers and organizations for the sick of the states and subordinate jurisdictions of civil government—authorities appointed, trained and qualified for expert care in public health—can, by virtue of federal grants and under federal regulation and restrictive standards, deal expertly with the elaborate services required for the sick in hospitals, dispensaries and in individual home, in spite of their lack of qualifications or familiarity with the diagnosis and treatment of disease.

You must distinguish the fact that the technique and responsibility of public health constitutes a specialty of medicine as different from all other specialties as obstetrics differs from psychiatry. Practitioners of public health cannot be expected to take on the entire responsibility for organized care of the sick in the United States and yet that is precisely the mechanism which has been created and provided for under the Wagner Bill. The only person in any state who shall have a chance to administer any of these several services that you have heard of in cooperation with the federal government, is the state health officer.

The state health officer has been picked not for his knowledge of the care of the sick, not for experience in clinical medicine, not because he has a reputation as a diagnostician in the treatment of disease, but because he has been trained to prevent disease, and that is as different as I

say, from care of the sick as obstetrics is from psychiatry.

It is quite impractical to take the 48 different state health officers in the United States and create in them a super-council responsible for the care of the sick. Remember how these health officers are appointed. Remember that the state of Texas had 22 health officers in 23 years. Remember that one qualification of the newly appointed health officer of the state of Pennsylvania is because he married the daughter of a Philadelphia boss. Remember that the newly appointed health officer of the state of Massachusetts was appointed as a result of a political huddle just before the new governor came in and in the face of the opposition of the entire medical profession in the State.

About one-third of the health officers in the United States are not trained for the positions which they hold—to say nothing of them dominating the whole practice of medicine. This is a mechanism that just cannot work because there is neither the experience nor the responsibility in those men to carry it. It is recognized by the medical profession that these are not possible.

In New York we are blessed with a great health commissioner. We have a tradition of having good health commissioners, but if you ask that same man to take these great responsibilities of health and add to them the care of the sick, his efficiency will be lost by having his interest diverted to that end. Familiarity with this professional group of public health workers convinces me that the health services of the cities, counties, and states will deteriorate if the major responsibility of the health departments is in the care of general sickness.

It is assumed in this structure that the education of physicians, sanitarians, nurses and other associated professional personnel can be extended and hastened better by federal subsidies to individuals or institutions than by independent development of physicians in educational institutions under present auspices and with present resources. There is no experience, accomplishment or leadership in the field of professional education in the federal government of a quality equal to what is to be observed in the non-political and endowed institutions of education in the United States today.

Every draft of funds from the state is distributed according to some federal formula or

departmental criterion. The backward and impoverished states are encouraged to depend upon federal doles for purely local state functions. This device represents a duplication of the unsatisfactory system of medical services developed in an era of social conception and central government dominated by Bismarck and Lloyd George, neither of which has brought adequate support or lay satisfaction to Germany or Great Britain.

The United States is now at the head of the modern nations in the performance of medical functions for social ends. The structure created by the local and state governments and by society has functioned, is delicately adjusted—it is well understood by the communities concerned and is improved as fast as human resources and funds will permit.

The undertakings provided for in the Wagner Bill would set back rather than advance public health, and would destroy the strongest motives of self-reliance of local responsibility by dependence upon remote government officials unfamiliar with the respective needs, ambitions and capacities of widely varied state populations and government.

Nothing but a threatened calamity of catastrophic propositions could justify such control over functions which are reserved by the constitution to the police powers of the sovereign state. Calamity of an enduring kind to the applications of medical science for social ends is likely to follow any general acceptance of the policies and programs provided for in the Wagner Bill.

PREVALENCE OF IMPAIRED HEARING

A recent issue of *Health Messenger* comments on the frequency of impaired hearing, we quote in part:

Have you noticed a gradually increasing tendency toward deafness? If you are among the many people in the "over 40" age group whose answer to these questions is yes, the chances are rather good that your difficulty started when you were a child and that the outlook for cure is not now very promising.

What evidence is there of such a conclusion? In the first place, scientific research on a large scale has shed new light on the causes of deafness or partial deafness in adults. In the second place, some recent studies in Illinois show a surprisingly large proportion of school children with defective hearing. The human ear is tuned to a much wider range of sound than that expressed by the normal human voice so that impairment in hearing may begin and progress considerably before it can be detected by even a slight difficulty in hearing human conversation. For that reason, a process

destined to impair hearing seriously in later life may begin during childhood and continue to grow worse gradually for years without recognition.

To determine, if possible, the causes of deafness a staff of scientists set up a laboratory at Johns Hopkins University fourteen years ago and since that time has accumulated about 15,000 records of patients who have been studied. From these studies Crowe and Baylor conclude, in a report published in the February 18, 1939 issue of the *Journal of the American Medical Association*, "that the most common type of middle ear deafness in adults begins during childhood. It often progresses so gradually and insidiously that it may not be evident, i. e., the frequency range of speech is not involved, until it is too late to correct the primary trouble and restore the hearing. We feel that if school children in the primary grades were examined with a nasopharyngoscope at least once a year and those with hyperplastic lymphoid tissue in and around the orifice of the Eustachian tubes were treated with radiation as often as necessary to insure normal functioning of tubes, the number of deaf adults in the next generation could be reduced by 50 per cent."

This conclusion and challenge is based upon convincing evidence and discussion too long and too technical to recite here. None need be reminded, however, that mechanical advancement, particularly in the fields of transportation and radio, adds constantly to the significant importance of good hearing for the sake of safety as well as cultural advancement. The appreciation of instrumental music, moreover, depends in no small measure upon the acuteness of hearing.

As to the prevalence of impaired hearing among children, a progress report of an investigation now underway in Illinois gives some rather astonishing indications. A modern audiometer is used to test the hearing of school children. This instrument is highly reliable and tests the hearing over a range of sound much broader than that of the ordinary human voice.

During September, October, November and December of 1938, hearing tests were given to 23,798 school children in sixteen different counties located in every section of the State. Impaired hearing was recorded in 3,816 or about 16 per cent. Both ears were impaired in 873 of these and one ear in 2,943.

Tests for vision was also given. During the four months, impaired vision was found in 2,914 of the 20,952 children tested.

Children whose impairment of either ears or eyes seems to require prompt attention are asked to see their family physicians without delay, taking the report of the test findings to the doctor. Nurses from the Illinois Society for the Prevention of Blindness, which is cooperating in the project, follow up the cases where no local facilities are available for that purpose.

Recently the U. S. Public Health Service conducted a sort of "inquiring reporter" survey of 9,000 adults selected at random in 12 different cities, each of the adults being asked if he or she could hear perfectly well. Only about one-half of the 9,000 men and women interviewed believed that their hearing was normal and nearly one-half of these (44 per cent) failed to pass an audiometer test for perfectly normal hearing.

MEDICAL ECONOMICS

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The outstanding development of the past month with its numerous conventions of state medical societies, topped by the annual meeting of the American Medical Association at St. Louis, the week of May 15, was the report of the Reference Committee which has been studying the so-called Wagner Bill, designated as S. 1620, since it was introduced early this year. If other arrangements have not been made for the publication of this most comprehensive, complete and scholarly report at some other place in the current issue of the ILLINOIS MEDICAL JOURNAL, you will find the same at the completion of this article. Be sure and find it and read it carefully, particularly the twenty-two articles in the summary. If every medical man in the country will carefully digest the reasons and arguments against the passage of this bill, he will be ready to explain to his Senator or Representative why he should be opposed to the bill for other than reasons of economy. The committee, who compiled this report are entitled to the thanks and gratitude of the entire medical profession. This report was received and accepted as the opinion of organized medicine without a single dissenting vote. This is most unusual and shows the agreement of the medical profession on the subject, in spite of all the talk by a few dissenters.

At the meeting of the Illinois State Medical Society, held in Rockford on May 1-3, many economic problems were presented either in the House of Delegates or directly to the Council. As in the past they had to do principally with the care of the indigent and low income groups. Two of these were referred to this Committee for study and future report. One has to do with the care of those on old age or blind pensions, who receive additional money each month for medical needs. Often, however, these moneys are dissipated before they are used for that purpose so that, when illness develops, services must be rendered as in the past by the medical profession either

entirely free or practically so. In Knox County, the problem has become most acute and there is in the process of formation a group plan modeled to some extent after the so-called Group Hospitalization Plan. This is to be examined carefully and the feasibility of its adoption as an experiment carefully considered. It is, of course, open to the criticism, that the medical profession is to furnish an indefinite amount of service at a fixed price. Another question up for consideration and like the other referred to this Committee was presented by Dr. A. H. Mason and Mr. Allen of Chicago. Under their plan a corporation, not for profit was to be formed to furnish medical, surgical, nursing and hospitalization care on an insurance basis. To do this a change in the State laws would be necessary so that a corporation could legally practice medicine in the State of Illinois. All they desired was the approval of the Illinois State Medical Society. After considerable consultation between the members of the Committee aided by the counsel of the Society, it was decided that such approval was not in accord with the ideas of the Society, and accordingly the request was refused. However, this did not stop the introduction of the bill into the legislative hopper, during the time of the annual meeting. Of course, its fate is indefinite, but we can rest assured that our most efficient Legislative Committee will watch it carefully.

Another resolution passed by the House of Delegates and referred to this committee came from the St. Clair County Medical Society and requested a study of voluntary sickness insurance plans being developed by the constituent and component societies of the American Medical Association, with the view of submitting to the Council at a subsequent meeting, a plan for sickness insurance in Illinois. In view of the many plans now in operation throughout the nation, including those in Illinois, this becomes a stupendous task, which will require much time

and energy, as well as the expenditure of some money's. The cooperation of the American Medical Association will be of the utmost necessity. It is to be hoped that officers of local county societies will answer promptly all inquiries as to the nature and success of plans in their communities.

The Bureau of Medical Economics of the American Medical Association has just published a brochure on Factual Data on Medical Economics, which should be of the greatest interest and value to anyone who is making an effort to keep up-to-date on medical facts which are of assistance in the preparation of talks to either the profession or lay audiences. If you want a copy write to the Bureau at their Chicago office.

The Mid-Spring issue of *America's Future* continues to combat State Medicine with most excellent articles by Haven Emerson, Ray Tucker and H. L. Mencken. We hope that many members of the Illinois State Medical Society subscribe to this magazine and in addition to reading it thoroughly, pass it on to their friends or at least keep it on the table in their waiting room. For the benefit of those who may have missed reading the article by H. L. Mencken, we will reprint the same with the permission of the Editor and the author, provided the Editor has the necessary space available at this time.

This completes another year of this column under the supervision of this Committee. We thank you for the kind words of approval we have received, and trust that you will accord the new committee, particularly the Chairman, the same cooperation.

E. S. Hamilton, Chairman,
Committee on Medical Economics.

BEEN PUSHED AROUND

*The Sage of Baltimore Unlimbers in Their
Defense*

H. L. MENCKEN

When the Hon. Thurman W. Arnold, Assistant Attorney General of the United States, announced from the New Deal Kremlin that he was about to proceed against the American Medical Association as a wicked and unlawful monopoly, the project appeared to be only an elephantine sort of practical joke.

Almost alone among the goons of the New Deal, the Hon. Mr. Arnold is a man of humor, with a waggish gift of hitching moral theology to the music of Offenbach. He has well displayed that gift in his excellent books.

Moreover he is a juriconsult who has studied law as well as taught it, and so he may be trusted to know that there is sometimes danger in proving too much. That danger, it seems to me, shows itself in his dithyrambs against the association for refusing to countenance the Group Health Association, Inc., of Washington:

"It is an attempt on the part of one group of physicians to prevent qualified doctors from carrying on their calling, and to prevent members of the Group Health Association from selecting physicians of their own choice. The Department (of Justice) interprets the law *as prohibiting combinations which prevent others from competing for services as well as goods.*"

The italics are mine, but the words are the Hon. Mr. Arnold's. If they mean anything at all, they mean that it is a violation of the Sherman Act to throw a picket line around a struck plant and prevent non-union men from entering—nay, that it is equally a violation of the law to sign or even advocate a closed-shop contract.

If the law, as the Hon. Mr. Arnold argues, protects non-union doctors against union control or interference, then how can it fail to protect non-union plumbers? Its specific object, as he explains in another strophe, "is to prevent *artificial impediments by organized groups who desire to escape competition.*" Well, what is a labor union but such an organized group, and what is its purpose if not to escape competition?

The Hon. Gentleman was fetched down from Yale to enforce the Sherman Act, and is thus not charged with honing the teeth of the Wagner Labor Relations Act, but no doubt he has heard of it, and perhaps even read it. If so, he must be aware that one of its principal objects is to prevent the formation of company unions. Can the Group Health Association, Inc., be described rationally as anything else? Who organized it—the doctors or their bosses? Do the doctors elect new members of the medical staff, or do the bosses appoint them? And if a doctor is canned by the bosses, does he continue as a member or lose his membership?

These considerations left me in some doubt

that the Hon. Mr. Arnold was really serious. But if he goes up to the Supreme Court with his theory, and convinces four judges and Hugo Black, there will be merry hell to pay all along the line, and he'll be lucky if he is not sent back to Yale C. O. D.

The present disingenuous assault upon the American Medical Association did not originate in the Department of Justice. It originated in quite other quarters and has been going on for a long while. There are doctors who aspire to office in the association, with all the honors and dignities thereto appertaining, but do not seem to be able to get the necessary votes; they appear to believe that their chances would be better under some sort of medical new deal. And there are quacks who have felt the association's heavy hand: they are against it on all counts and to the death.

Both these parties have been on the warpath for years. Of late they have been joined by a miscellaneous rabble of pinks, some of them outright converts to the Moscow hooey and others members of the "I'm Not a Communist—But" Association. The aim of these brethren is to nationalize the profession of medicine in the United States as it has been nationalized in Russia. Some of them say so frankly, and undertake to prove idiotically that the Russian system is better than the American. The rest, less honest, root for it without openly advocating it.

All the pink weeklies and other manic-depressive sheets are hot against the A. M. A. and belabor it constantly. They denounce it under the name of the medical trust, and allege that its members are racketeers who rob their patients and oppress the poor.

The Group Health Association, I have no doubt, is careful in selecting its medical staff; that fact is not disputed by opponents of its scheme.

The caveats filed against it have quite different grounds. The chief of them is that the plan interposes a third party between doctor and patient, and subjects the doctor to lay control.

The "arrangements" to which the American Medical Association objects, and quite properly objects, not only offer hospital accommodations, but also medical service. They employ doctors, organize them into staffs, put them under superiors (some medical, but others lay), and hire them out to subscribers. Whatever the sub-

scribers pay for their services goes, not to the doctors, but to the organization. It pays them whatever they are willing to work for, and keeps the rest.

Obviously, no doctor who works under such conditions can be said to maintain a strictly professional status. He may have a good job; he may like it, and he may give competent and conscientious service to the patients assigned to him, but in the last analysis they are the association's patients, not his. It may take them away from him at will, and assign him others. It may take them all away from him by dismissing him. They exist as his patients only by the association's grace, and on conditions that it lays down.

He is no longer a free agent. He works for an association whose bosses have his livelihood, or the greater part of it, in their hands. They are tempted, in order to keep within their income from members, to work him as hard as possible, and he is tempted, as a makeweight, to abate his professional ardors, to the damage of his patients.

A conscientious and industrious man may resist that temptation, but there it is, and experience with State Medicine has shown that in the long run it has effects. In so far as the members save money by the scheme, the doctor loses, and the only way he can recoup is by cutting down the service he offers.

Certainly the lawyers in the Department of Justice must be well aware that an analogous effort to invade and deprofessionalize their own profession has been under way for years and that nearly all the decent lawyers in America have opposed it violently and gone into court time and again to prevent it. All the objections that these decent lawyers have brought against the practice of law by corporations are valid against the practice of medicine by corporations. Both schemes, however artfully they may be disguised, involve the organization of professional men into gangs bossed by laymen and the retailing of their services to all comers. Both are destructive of their professional status.

But the chief objection to the plan, from the standpoint of the American Medical Association, is that it clearly paves the way for State Medicine. Once it gets going, uplifters will arise to argue that the fees of the members ought to

be paid by the taxpayer, and the first time the proposal comes to a vote it will be carried.

Then all the doctors on the roll will become jobholders, and their professional labors will be largely controlled and determined by politicians. Some doctors believe that, with the New Deal reaching out constantly for more and more power, this is inevitable, and a few even profess to like the prospect. But the overwhelming majority are against it, and the American Medical Association continues to oppose it, Arnold or no Arnold.

Correspondence

HOW THE SCIENTIFIC SERVICE COMMITTEE FUNCTIONS FOR THE AID OF COUNTY SOCIETIES

Back in 1923 the Educational Committee was developed to give health educational services to the laity as a whole. Within a relatively short time a surprisingly large list of contacts was developed, many lay groups all over the state desiring to utilize the services made available for them.

At that time Dr. James Hutton thought more aid should be given to county medical societies and especially those smaller societies which were having trouble in securing speakers for their meetings. The Scientific Service Committee was formed, as a sub-committee of the Educational Committee, to give all possible aid to county medical societies. A long list of speakers and subjects were developed and sent to all of them. At first efforts were concentrated on procuring speakers for county societies, aiding them in publicizing their meetings, and later on, many of the announcements for the meetings were mailed out from the Educational Committee office, while the Secretary's office of the Society would furnish a suitable mailing list of physicians in surrounding counties.

The work of this committee was increased through the development of a plan to send a group of speakers, or clinicians to deliver symposiums on important subjects, to hold clinical conferences or clinical-pathological conferences, as the Society would prefer.

In many county organizations, speakers in teams were sent at regular intervals, perhaps weekly or semi-monthly, to give a regular course of instruction on subjects selected by county so-

cieties. Clinics on heart conditions, pediatrics, obstetrics, orthopedics, and other subjects were arranged, whereby the clinician would examine and discuss the various cases during the day, then at night he would address the society at a special or regular meeting. Letters were always sent to county medical societies telling them of the services which were available and asking for suggestions as to how the committees could be of better service to them.

For at least thirteen years the Committee has used many men from the St. Louis Medical Schools and their hospitals, and it has been the practice of the Committee to write to the Deans when a St. Louis man was desired, and they have invariably assisted in getting the man desired, or a good substitute.

A fine spirit of cooperation has been enjoyed with the State Department of Public Health. Dr. Harold H. Hill who is Field Agent for the State Department in the Maternal and Infant Welfare Program, has had complete cooperation on the part of Miss McArthur and the committees from the start of the program. The State Medical Society Committee on Maternal Welfare is composed of physicians from each Councilor District, and meets quarterly to talk over plans and receive reports. Doctors Falls and Hill are advisory members of this Committee.

The same type of cooperation exists with the State Department of Public Health in their pneumonia control program. Doctor Lindberg who has charge of that program came before the Council and asked for suggestions and expressed a desire for Society cooperation. This was promptly given and he has received much aid in the campaign from the Committees with Doctor Berghoff and Miss McArthur scheduling many speakers on pneumonia and its modern treatment throughout the state during the past winter.

The Scientific Service Committee has been developed to assist county societies, who are in complete charge of their own plans and programs. The State Medical Society through its House of Delegates and the Council have long thought that it was not necessary to apply for outside aid in carrying on any of these functions.

Dr. Robert S. Berghoff, Chairman of the Scientific Service Committee of the Illinois State Medical Society was the official representative

of Illinois at a meeting held in St. Louis on May 17th of the Associated State Committees on Post-Graduate Medical Education. He presented the following written report to those attending. After listening to the reports of the representatives, it was the chairman's firm conviction that no state medical society, operating WITH or WITHOUT Federal financial aid is offering to its county medical societies a more comprehensive, divergent and practical service than that of the State of Illinois.

DATA ON SCIENTIFIC SERVICE COMMITTEE

A Report to Committee on Post Graduate Instruction

St. Louis, May 17

Post graduate instruction in the State of Illinois is under direct supervision of the Scientific Service Committee—sub-committee of the Educational Committee of the Illinois State Medical Society.

The Educational Committee of the Illinois State Medical Society was founded in the year 1924.

Its primary functions are:

1. Lay Medical Education
2. Radio Health Talks
3. Newspaper Health Columns
4. Etc., etc.

Its annual average financial budget is \$12,000 contributed entirely by funds from the State Medical Society. No funds from State or Federal Agencies.

The Scientific Service Committee was established as a separate and definite sub-committee in the year 1927 under the Chairmanship of Dr. James H. Hutton who held that office until 1933. Dr. Frank L. Brown served for two years. Dr. Robert S. Berghoff was appointed Chairman in 1935 and has continued to serve in that capacity. The Scientific Service Committee is financed entirely by the Illinois State Medical Society through the Educational Committee on an average annual budget of approximately \$4,000.00.

Function: The sole function of the Scientific Service Committee is the servicing of the scientific needs of the 91 component county medical societies.

Personnel: The Scientific Service Committee consists of a chairman—appointed or reappointed annually by the Chairman of the Council, the

President of the Illinois State Medical Society, the Secretary, and two additional members—all serving without honorariums.

The Committee functions through a central office, or clearing house, located in Chicago, under the direct supervision of a full-time secretary with many years experience. This secretary has a full-time assistant and one stenographer.

Scientific Facilities: The Scientific Service Committee has during the past twelve years built up a vast and comprehensive Speakers' Bureau. This bureau at present comprises over five hundred individuals, men and women, prepared to put on lectures, demonstrations, clinics and conferences, on medicine, surgery, the specialties, and on the widest possible variance of subjects. These speakers are selected, in part, from the Universities and Medical Schools of Chicago, as well as from the widely scattered county societies throughout the State. It has long been realized that individual practitioners in far distant counties, frequently through local contact are better able to convey a message to a neighboring county society than can a lecturer from the metropolis.

The list of speakers, as well as the subjects, is revised and augmented yearly—and is sent out in pamphlet form annually to each county secretary and president.

The following types of scientific programs are available to all ninety county medical societies:

1. Lectures and Demonstrations on every specialty and sub-specialty of medicine and surgery.
2. Clinics—on heart disease, orthopedics and general surgery, internal medicine and its sub-specialties.

The modus operandi of clinics in general, is as follows: A speaker or speakers, selected by the county secretary from his list, is sent to the county medical society by the central office in Chicago on a given date. In the presence of the local county society members, the specialist examines and demonstrates patients previously selected for him. After the clinic, he conducts a general resume of his subject, and the meeting ends with a general discussion.

3. Clinical Conferences—on a wide variety of subjects were instituted during the past year. A guest speaker selected by the local county secretary, opens up a given subject, and calls upon several local physicians previously appointed to expand upon the topic—which again is followed by a general discussion. These informal con-

ferences are proving even more popular than the stereotyped formal lecture or paper.

In addition to providing scientific programs to county societies, entirely gratis (the expenses being borne by the Scientific Service Committee)—the Committee renders further service as follows:

1. The central office will on request mail out notices concerning these meetings, to all members of county societies.

2. Through the medium of over 600 local newspapers, publicity is afforded these meetings, both in advance and after the meeting.

The response to this service proves its merit and appreciation. Year by year the numbers of county societies making use of this service have grown so that during the past year a peak of 82% was reached. Not only did 82% of the ninety county societies call upon their scientific service committee for aid, but called some of them six and eight times in the current year and one society for weekly programs from September 1st to May 1st.

The Scientific Service Committee takes justifiable pride out of the fact that beginning twelve years ago—in a pioneer work—blazing a trail with only a very few other states to keep it company—it has plodded along, growing and expanding, until today it boasts of a roster of illustrious men and women in every specialty and sub-specialty of medicine and surgery able and ready to service the ninety widely scattered county medical societies—and during the current year it has actually carried its many messages to 82% of all of its counties at their own request—And mind you, without a dollar of State or Federal money!

Robert S. Berghoff, M. D.,

Chairman Scientific Service Committee.

EDUCATIONAL COMMITTEE

Reports Progress during April and May

HALL OF HEALTH:

The Hall of Health held in connection with the Annual Meeting in Rockford proved to be most outstanding with fifty different groups exhibiting. Through the office of the Educational Committee the exhibitors were secured, the handbook prepared, and material compiled for publicity purposes.

Comments from Rockford indicated that the Hall of Health was a great success.

"The exhibition should have continued for an entire week."

"I had no idea of the great contribution that the

medical profession has made to society's welfare."

"More shows like this, put on by the medical profession rather than State or local health departments, elevates the dissemination of medical knowledge to a higher plane."

"This exhibition, more than any other propaganda I have seen, brings to light the necessity of restricting the control of the practice of medicine to the medical profession instead of governmental agencies, even if it should be placed under the jurisdiction of a federal, state or local health department."

"If the general public knew more of the problems of the doctors as shown at this exhibition, state medicine would be forgotten."

"A fine exhibition and our organization would enjoy participating when the Illinois State Medical Society meets in Rockford again."

"We have had many people staying with us remark that they have never before, in all their experience, seen such a marvelous exhibit."

The poster and essay contests proved very successful with about 250 high school students writing essays on the family doctor. The Office of the Educational Committee wrote letters to all contestants in both contests thanking them for entering and congratulating those who won prizes. Special package libraries were compiled and loaned to students competing in the essay contest.

SPEAKERS' BUREAU:

95—Programs were arranged for lay audiences throughout the State.

The Committee cooperated with the Chicago Board of Education in promoting Youth Week and scheduled doctors to address 21 high school assemblies in Chicago.

Speakers were scheduled for the Annual Meeting of the Illinois Congress of Parents and Teachers and exhibit material was furnished on the services offered by the Illinois State Medical Society.

RADIO:

26—Radio programs were given from Chicago stations and copies of material were furnished downstate county societies.

EXHIBITS:

Exhibits were furnished Marshall Field & Co., The Annual Meeting of the Illinois State Dental Society, the Illinois Congress of Parents and Teachers, The Hall of Health, The Association of Physical Education Directors.

PACKAGE LIBRARIES:

Special package libraries were compiled for students entering the essay contest held in connection with the Hall of Health.

Package libraries on all types of health subjects were furnished physicians in many sections of the state who had been asked to address lay groups.

AID TO COUNTY MEDICAL SOCIETIES:

600—Notices prepared for LaSalle County.

125—Notices prepared for Perry County.

138—Notices prepared for Effingham County.

- 200—Notices prepared for Hancock County.
- 200—Notices prepared for Bureau County.
- 293—Notices prepared for Henry County.
- 273—Notices prepared for Lee County
- 104—Notices prepared for Lawrence County.

SPECIAL PUBLICITY FOR MEDICAL MEETINGS:

- 611—Releases about Annual Meeting in Rockford.
- 200—Invitations sent to Secretaries about Secretaries' Conference.
- 98—Releases re Bureau County.
- 36—Releases re Hancock County.
- 13—Releases re Maternal Welfare Program in Peoria.
- 29—Releases re Effingham County.
- 8—Releases re North Shore Branch.
- 43—Releases re Henry County.
- 58—Releases re LaSalle County.

PRESS SERVICE FOR APRIL AND MAY:

- 40—Releases to papers using health education articles monthly.
- 123—Releases to Chicago newspapers.
- 636—Releases to Illinois newspapers.
- 976—Releases to newspapers using regular editorial health features.

Health articles written and approved on the following subjects:

- Only a Sore Throat?
- Walk This Spring
- The Doctors Meet
- How Is Our Health
- We Celebrate Mothers Day
- Early Spring Hay Fever
- Maintaining Good Sight
- Tetanus and Summer Time
- In the Good Old Summer Time
- A Happy Vacation

MAILING LIST:

- 714—Articles to Libraries.
- 684—Articles to Hospitals.
- 233—Reprints from A. M. A. on "What is Osteopathy" to libraries and hospitals.
- 4,128—Health articles to lay list which includes W. P. A. Teachers, Home Advisers, Schools, Red Cross leaders, Teachers.
- 3,000—Copies of "State Medicine" by Dr. H. P. Saunders, "Sickness and Hospital Insurance" by Dr. N. S. Davis and "What Socialization of Medicine Means to You" by Dr. Harold M. Camp were sent to the entire mailing list including laymen, hospitals, libraries.

SCIENTIFIC SERVICE COMMITTEE:

The Chairman of the Scientific Service Committee attended a special luncheon meeting of the chairmen of postgraduate education from other state societies in connection with the St. Louis A. M. A. meeting. He gave a report on the activities in postgraduate educa-

tion of the Illinois State Medical Society which was enthusiastically received.

39—Scientific programs were arranged by this Committee during the months of April and May. Calls were received from the following:

Scott County, Iowa; Lawrence County, Sangamon, Perry, Will-Grundy, Madison, Mercer, McLean, Bureau, Effingham, Kankakee, Pike, LaSalle, St. Clair, Hancock, Alexander, Union, Champaign, Rock Island, Coles-Cumberland, Marion, Henry, Stephenson, Douglas.

The Scientific Service Committee cooperated with the Maternal Welfare Committee in promoting special obstetrical and pediatric programs in hospitals in various sections of the state. These meetings were in the form of clinical conferences with cases being reviewed in the afternoon and general discussions in the evening.

The Committee is prepared to give any type of scientific help requested by county medical societies. During the past year it has arranged monthly or weekly programs for a number of societies following a very definite plan of study.

POSTGRADUATE COURSES IN OBSTETRICS AND PEDIATRICS TO BE REPEATED AT THE UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE

The Departments of Obstetrics and Pediatrics of the University of Illinois cooperating with the staffs of the medical schools of Chicago and the State Department of Public Health, will again offer to physicians of Illinois an intensive one week's course in obstetrics and pediatrics at the Research and Educational Hospitals. The course begins each Monday morning at nine o'clock and ends at noon on Saturday. The courses begin July 10 and end with the week of August 28.

As seen by the schedule, the course will be of practical value to the family physician. It will include bedside clinics, antepartum and postpartum care, manikin, demonstrations, didactic lectures, care of the newborn and premature infant, child-health problems, immunization procedures, and round table discussions on many important obstetric and pediatric problems.

The staff members of all Chicago Medical Colleges are participating in giving the course and will include such Obstetricians and Pediatricians as Doctors W. C. Danforth, F. H. Falls, F. L. Adair, Joseph Baer, A. F. Lash, W. H. Browne, Charles Newberger, Julius Hess, Clifford Grulee, Arthur Parmalee, Isaac Abt, Maurice Blatt and H. E. Irish. Opportunity is given for individual consultation work with many of these men.

The registration is limited to 20 each week. Physicians outside Chicago are given preference. Physicians are urged to make their reservations early as experience has shown in the last two years that the courses have been given, that the places will be filled rapidly. A limit is placed on the class number in order to preserve the conference type of instruction that has been so enthusiastically received by the physicians attending in the past two years.

The registration fee of \$10.00 is the only fee required. Application should be accompanied by the registration fee and should be sent to Mr. G. R. Moon, 1853 West Polk Street, Chicago, Illinois.

APPLICATION BLANK

Name.....M. D. Age..... Date of Graduation.....
Street AddressCity.....

Member of.....County Medical Society (not required)
Registration Fee \$10.00.
1st choice—week of
2nd choice—week of
3rd choice—week of

Excellent living accommodations can be obtained at the nearby students' Y. M. C. A. at reasonable rates.

Make checks payable to the University of Illinois, College of Medicine.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9 A. M.	Lecture Obstetrics	Lecture Pediatrics	Lecture Obstetrics	Lecture Pediatrics	Lecture Obstetrics	Lecture Pediatrics
10-12 A. M.			Obstetrical Dispensary Pediatric Dispensary			
	ROUND TABLE DISCUSSIONS					
1-2 P. M.	Obstetrical Subject	Pediatric Subject	Obstetrical Subject	Pediatric Subject	Pediatric Subject	
2-4 P. M.			Ward Walks—Research Hospital Obstetric—Pediatric			
4-5 P. M.	Manikin	Obstetrical Consultation Hour	Consultation Hour	Manikin	Preparation of Diets for Infants	
5-6 P. M.	Manikin			Manikin		
6 P. M. to			Deliveries Home and Hospital			
4 A. M.						

EXAMINATIONS—AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The American Board of Obstetrics and Gynecology announces that at the recent examinations held by the Board at St. Louis, Missouri, on May 13, 14, 15, and 16 two hundred and fifty-nine candidates were examined. Two hundred and twenty-eight candidates were successful in the examinations and were certified by the Board, twenty-nine candidates failed, and two examinations were not completed by the candidates.

At the annual meeting of the Board, held in St. Louis on May 12, 1939, it was found necessary, on account of increased administration expenses, to increase the application and examinations fees. Effective immediately, these are to be as follows: Application fee \$15.00, payable upon submission of application for review by Board. Examination fee \$75.00, payable upon notification to candidate of acceptance of the application and assignment for examination. Neither fee is returnable. This increase does not apply to candidates whose applications were filed prior to May 12, 1939.

The next written examination and review of case histories (Part I) for Group B candidates will be held in various cities of the United States and Canada on Saturday, December 2, 1939, at 2:00 P. M. *The Board wishes to announce that it will hold only one Group B, Part I, examination in this and subsequent years.* Candidates who successfully complete the Part I examinations proceed automatically to the Part II examinations held later in the year.

Applications for admission to Group B, Part I, examinations must be on file in the Secretary's office not later than October 4, 1939.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board, meeting in Atlantic City, N. J., on June 7, 8, and 9, 1940, immediately prior to

the annual meeting of the American Medical Association to be held in New York City from June 10 to 14, inclusive.

Applications for admission to Group A, Part II examinations must be on file in the Secretary's office not later than March 15, 1940.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

GRADUATE COURSES IN ELECTROCARDIOGRAPHY

Two Weeks—August 21-September 2, 1939

By Dr. Louis N. Katz

Director of Cardiovascular Research

This is an intensive course offered to the general practitioner. There will be practice on several electrocardiographic machines and discussion of the principles of their construction and use. There will be sessions on interpretations of electrocardiograms illustrated by lantern slides and practice by the student with unknown records. Routine records taken during the time of the course will be discussed. Emphasis will be placed on chest leads and on the importance of the electrocardiogram in coronary sclerosis and thrombosis. The mechanism and interpretation of heart irregularities will be developed.

As group and individual instruction will be given, the course is open to both the beginning and advanced student in Electrocardiography. It is planned to individualize the course so that at the end of the period each student will be capable of taking and properly interpreting routine electrocardiograms. In order to accomplish this purpose the class will be limited in number. It is imperative, therefore, that reservations be made early.

The fee for the course is \$100.00. Reservations may be made upon receipt of \$10.00 which will be applied on the tuition. An hourly program of the course will be sent on request.

For further information address: Michael Reese Hospital, Cardiovascular Department, 29th and Ellis Ave., Chicago, Illinois.

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE

POSTGRADUATE COURSE IN SYPHILIS GIVEN BY THE DEPARTMENT OF DERMATOLOGY

In cooperation with the various Departments in the University of Illinois College of Medicine. In the Research and Educational Hospital, 1819 West Polk Street. Offered under a grant from the Federal Government with the approval of the Illinois State Department of Public Health.

One week course: Daily from 9 to 12 A. M. and 1 to 4 P. M.

First period starts June 19, 1939.

The course consisting of lectures, laboratory demonstrations and the presentation of hospital and dispensary clinical material is designed to offer to the practitioner a review of the subject and a discussion of recent developments in this field.

The course will be repeated once each month during the summer. Only licensed physicians will be accepted. The number of registrants for any one period will be limited to 20 and the course will not be offered to less than 6. Those registering will be accepted in the order of application.

There will be a registration fee of \$10.00. Applications together with a check covering the registration fee, made payable to the University of Illinois, should be sent to the Examiner and Recorder at 1853 West Polk Street, Chicago, Illinois.

BLINDNESS IN THE UNITED STATES

According to an estimate of the National Health Survey recently released there are at least 117,000 totally blind persons in the United States.

In presenting this figure, the director of the Survey, stated that blindness, which already constitutes a major problem in society, will be likely to increase because older persons, among whom blindness is more prevalent, are constituting a larger and larger proportion of the population. One-fourth of the blind are over 75 years of age and three-fifths are over 55.

Cataract, glaucoma, trachoma, optic nerve atrophy and other eye diseases coupled with more general diseases such as high blood pressure, hardening of the arteries and diabetes are responsible for nearly three-fourths of all blindness. The rest is attributed to accidents (about 21 per cent.) and congenital or early infancy causes (approximately 7 per cent.).

Among the accidents causing blindness—which account for about one-fifth of the entire amount—the largest single cause is falls (16 per cent.); next in order come automobile accidents and burns (each 10 per

cent.); and poisonings and firearms (each 7 per cent.); the remaining 50 per cent. is distributed over a large number of known and unknown types of accident. Forty-three per cent. of these accidents are classified as occupational injuries, those occurring at work; 27 per cent. occurred in the home and 30 per cent. in public places, including automobile accidents.

The report pointed out that blind persons are concentrated in the low income groups. Seventy per cent. were found to be in families with annual incomes of less than \$1,000.

The prevalence of blindness among men is greater than among women, according to Survey findings. For every 100 blind women there are 111 men afflicted with blindness. Among youths (15-24 years), the prevalence rate for males is 20 per 100,000, while the female rate age (25-44) show a prevalence of 144 blind per 100,000 is only 9 per 100,000. Figures for the younger working men, while the rate for women is only 28. In the oldest age grouping (65 and over), however, the rate is 706 per 100,000 women to 660 per 100,000 men.

The Survey found nearly twice as much blindness among colored people as among whites in proportion to their numbers. The rate of blindness for colored persons is 146 per 100,000 as contrasted with 75 for the white population.

Only 11 per cent. of the blind were reported as being employed in gainful occupations, leaving the greater number dependent upon private or public support.

This study of the National Health Survey was primarily concerned with total blindness, which included "all persons reported by the family as being blind in both eyes." In connection with the study, however, figures for blindness in only one eye were compiled and it was estimated that "in the general population there were about 425,000 persons blind in one eye only," as against 117,000 persons blind in both eyes.

The Survey was a project conducted by the United States Public Health Service. The results are based on a house-to-house canvass of some 800,000 families, including 2,800,000 persons in 83 cities and 23 rural areas in 19 States. The Survey was made during the winter (largely from November to March) of 1935-36.

NEVER OPPOSED THE PAYMENT OF MEDICAL BILLS THROUGH INSURANCE

Practically no one—and certainly not the American Medical Association—has ever opposed the payment of medical bills through insurance. The medical profession has objected most strenuously and continues to object to the compulsory wholesale purchase and retailing of medical service to patients by an insurance company, governmental agency, or any other organization or individual. This objection rests on the proof afforded by vital statistics that during this process of purchase and retailing the medical service is adulterated by politics and depreciated by administrators until it loses much of its value as a protection of the public.

In the most commonly advocated plans of voluntary and compulsory sickness insurance, premiums are collected in cash and then transformed within the insurance

administration into service benefits for the insured. All other systems of insurance collect premiums and pay benefits in the medium of exchange. The two sides of the balance sheet are then written in the same units. It is much more difficult to tamper with the bookkeeping for political purposes or to deceive the sick as to the benefits received than in systems in which receipts are counted in cash and benefits are delivered in an unmeasurable service. Indemnity insurance collects the premiums in cash and pays cash to the insured on a definite scale in accordance with the economic losses suffered from sickness.

There would be fewer complications and far less red tape in such an indemnity system than in one with service benefits. Free choice of physician would be automatic. Restrictions on prescribing and other phases of treatment would be unnecessary, as there would be no need to deceive the patient as to the quality and extent of the service he was receiving.—Journal A. M. A.

THE REASON FOR HOMICIDES

The statistical bulletin of the Metropolitan Life Insurance Company, January, 1939, offers the following data as to the various reasons for our national homicide rate.

Half the homicides committed in the United States arise over some trifling incident. This is the conclusion reached by a study of 500 homicides reported to the Metropolitan Life Insurance Company among a group of its policyholders. It may well be assumed that the same proportion applies to the total of about 10,000 homicides reported annually for the United States as a whole.

The information regarding the circumstances attending the 500 homicides covered by the present study has been obtained from such sources as reports of coroners' inquests, statements of insurance investigators, and newspaper clippings.

A great variety of situations—for the most part, absurdly trivial quarrels—led up to these misfortunes. Chief among these were disputes concerning domestic or family affairs: An irate husband beats and kills his wife because his dinner is not ready on time; a drunken youth shoots his mother for remonstrating with him about his drinking to excess; a man shoots a friend after an argument over being the last to be served a glass of beer in a neighbor's home. No less than 11.6 per cent of all the slayings follow domestic quarrels about no more serious affairs than these.

The second important occasion of quarrels leading to homicide involves money or property, usually of little value—sometimes no more than 25 cents. In still other instances, quarrels arise because of insulting remarks or personal affronts, gambling differences, or other situations that create a burst of hatred or anger. Typical incidents of this kind are the following: A lunchroom proprietor shoots a customer after an argument over the quality of a sandwich; a man is beaten and killed following a quarrel developing from a person's accidentally stepping on another's foot; a man slashes another because they quarrel about who shall play a me-

chanical nickelodian first. In a considerable number of these cases the abuse of alcohol is mentioned. Out of the 250 killings resulting from quarrels, in 116 cases either the slayer, the victim, or both had been drinking.

In connection with the homicides arising from jealousy or thwarted love, it is interesting to note that the beloved, and not the love rival, is more often the victim. Fifty-three persons were slain thus, as against 35 slain by their rivals in a love affair. In this type of homicide the slayer commonly commits suicide. In fact, one-fourth of the slayers who were classed as aggressors in the slaying of husband, wife, or lover ended their own lives also.

Homicides arising out of or during crimes of violence—robberies, burglaries, or jail breaks—account for 80 victims in this experience, or 16 per cent of the total number. Unfortunately, the officers of the law and law-abiding citizens are the victims more often than the criminals. Of 43 persons who died at the hands of felons, 6 were police officers; 15 were going about their work as watchmen, gasoline station operators, tradesmen, etc.; and the remaining 22 were other law-abiding citizens. The number of felons slain was 37, of whom 33 were killed by law officers and four by their intended victims.

Spectacular murders by gangsters constitute a lower percentage of the total than we should be lead to expect from the publicity given to them. Only 14 of the 500 slayings, or under 3 per cent, fell into this class. These murders occur in connection with rackets involving the dope traffic, labor disputes, and lotteries, and usually arise from rivalry between gangs or the attempt of one gang to break into the territory of another.

Ten persons were killed in attempting to evade arrest for trespassing or for disturbing the peace. Eight were killed for revenge on account of personal grudges of long standing or from a desire to even scores against informers. Insane persons committed 14 slayings, of which six took place in institutions. In 11 cases no motive for the slaying was apparent; the slayer was crazed with liquor and had no particular enmity against nor quarrel with his victim. Apparently, at the moment, he merely wanted to kill. Of the three cases that are classified as due to miscellaneous causes, two involved sex offenses, and in one case the slayer killed his wife in despair over financial troubles.

Criminal abortions, of which there were 22 fatal cases, are included here to conform with the current international practice of statistical offices, which list this cause of death with homicides.

This review of 500 recent homicides brings out strikingly that practically all killings arise under the stress of emotions of fear, hatred, anger, jealousy, or greed. And, absurd as it may seem, by far the majority are due to disputes or quarrels about trifles. Surely under such conditions it should be possible to reduce the number of homicides to the point reached in other civilized countries.

FOR SALE—Reasonable, large size electric blanket—used but a few times.

I. W. CLAYTON
1643 Farwell Avenue

Original Articles

SHALL ORGANIZED AND SCIENTIFIC MEDICINE CONTINUE ITS PROGRESS?

SAMUEL E. MUNSON, M. D.

SPRINGFIELD, ILL.

Another year has passed into memory since the House of Delegates turned over to me the mantle of authority as President of the Illinois State Medical Society. Some of those well known throughout the State for their zeal in the progress of organized medicine, and revered by those in the communities where they lived and practiced their profession, have been taken by death from among us.

It certainly would have been a privilege if a year ago we could have had the opportunity of drawing aside the curtain of destiny and foreseeing the road before us, which we all looked forward to with misgivings. As a profession we have steadily carried our ideals forward to a better understanding with the public and a higher regard by those who serve us in public office.

The National Health Conference held in Washington, July 18, was one of the first matters of importance to appear on the horizon, to which certain members of the medical profession were invited. You have heard much of the Interdepartmental Committee appointed by the President to co-ordinate the health and welfare activities of the government. The survey upon which some of this committee's conclusions were based was made by W. P. A. workers in about seventeen states.

This survey was used by the committee by which they assembled data which was much at variance with data and information gathered by the American Medical Association through the medical profession. As we medical men know, there is not one-third of the population in our communities that are poorly clothed, poorly fed and without medical care. As has been stated, "This would be more of a social and economic problem than medical."

A committee of seven, including some of the officers of the American Medical Association, was appointed at a meeting of the House of Delegates last September, to represent the medical profession at future meetings of the Inter-

departmental Committee. Most of you are familiar with the results of the subsequent conference through the reports published in the *Journal of the American Medical Association*.

The Wagner Bill, now pending in the Senate, for the purpose of amending the Social Security Act and widening and extending government service as outlined last summer, is thought will not pass Congress this session.

It seems this law makes no specific mention of compulsory sickness insurance, but introduces the idea of the allotment of federal money to the individual states for medical care by the Social Security Board, without specifying the manner or means to be used in individual states.

The bill also makes no provision for utilization of existing hospitals, when it is stated that existing hospitals show a constant vacancy in bed capacity of thirty per cent.

Another matter in which we are much concerned is the indictment of the American Medical Association by a Federal Grand Jury in December. As stated by Dr. Irvin Abell, the fundamental principle involved is, if a conviction should occur, the power to police its members will no longer rest within a professional organization, and not only will the medical profession be affected, but all other organizations, such as those maintained by dentists, lawyers, architects and engineers.

In this scheme to bring about a broad application of social justice in some localities, there are some who desire complete socialization, and in this effort medicine has been chosen as the field for exploitation.

On account of the great size of our country and the various economic plans applied in the administration of the various existing conditions, the adjustment and correlation of these must require time and the best effort of the medical profession with a constantly enlightened public.

We are aware that mortality has been reduced fifty per cent in the last fifty years, and life expectancy has been increased one hundred per cent.

We also realize that there is a wide space existing between known medical knowledge and its practical everyday application. Do I dare say this may be still widening because of the rapid accumulation of medical knowledge that comes to us day by day from the research lab-

oratories and covering all the different branches of medicine?

From no other source is there greater effort and interest manifested than the medical profession in an effort to close this space so that the practitioner in general medicine may achieve the reasonable ability to use this new known knowledge in his everyday practice. Of course, we desire that this be accomplished in a way to continue the ethical institution of medicine.

I have no doubt some of you think this is an opportunity for the president to bring to the attention of the members of the Illinois State Medical Society some of the abuses that exist in the interrelations of our profession. Few know of these, as they have and do exist, better than I, with four and a half decades in the practice of medicine.

I believe in our societies there is ample organization of committees and duly elected officers to change and modify tendencies that detract from the honorable position and esteem as a profession that we have held since the early days of pioneer American medicine.

Is there any profession or organization, even religious, with a membership above criticism in the conduct of their affairs in daily life? So each member of the medical profession is a member of society, subject to all its influences of social environment and the exigencies of human existence.

I believe the time is here now for us to treat our affairs ethically among ourselves as a family.

Recently I sat upon the platform with all the official body of a great medical group with a large and cultured audience, and two hundred young men, the pick of the medical profession of America, were sworn and received into its membership. The retiring president, a man of fine qualifications and ability, discussed in his address as his own opinion, the abuses of splitting fees and a plan of compulsory health insurance which he said appeared to be desirable.

Group clinics and other phases of present-day medicine were also discussed, with their abuses, with a frankness which I believe should be left to the privacy of the medical family.

However, he mentioned that diagnostic services are often rendered in clinics and organized groups for low fees, frequently below cost, in competition with practitioners and internists

outside the groups, when they (the groups) made a profitable income from their surgical fees.

At a special session of the House of Delegates of the American Medical Association, held in Chicago, which was called for the consideration of the National Health Program, as submitted by the conference in Washington last summer, a reference committee was appointed, and after due consideration, made a report from which we now have final conclusions and answers for some of the things which had much perturbed the medical profession for the past two years.

A matter which had been talked about and considered for many years, and was advocated as early as 1876, was that there be a Federal Department of Health, with a secretary who should be a physician and a member of the President's Cabinet—a recommendation which is certainly most desirable.

Medicine has feared the possibility of a single ministry, to be concerned with the care of the indigent, non-employment and social service, which would be superior to the Minister of Health presided over by a physician.

At this special session of the House of Delegates, the reference committee passed the following resolutions:—

1. They approved the principles of hospital insurance, or group hospitalization, and believed the plans should confine themselves to the hospital facilities and in no way to include medical care. They encouraged county or district medical societies, with the State Society concurring, to develop appropriate means to meet the local requirements.

2. They believed it practical to develop cash indemnity insurance plans to cover the costs of emergency or prolonged illness.

3. They definitely opposed any system of compulsory health insurance, as it would undoubtedly establish a far-reaching tax system and thereby cause a great increase in the cost of government, with possible political control.

4. They recognized the soundness of the principles of workmen's compensation laws and recommended the expansion of such legislation to provide for meeting the costs of illness sustained as a result of employment in industry.

5. They recommended the full use of existing facilities of hospitals, rather than building new ones where adequate hospitals exist, that the

thirty per cent. of unoccupied beds in existing hospitals could be utilized.

It would seem that instead of having compulsory health insurance, or sickness tax, with the money collected and dispensed by the government with its many attendant disadvantages, especially high-cost administration, where agencies are set up to provide such insurance, this should comply with state statutes. This could be accomplished by the present existing plan in most of the places where federal and state funds have been distributed.

As stated by Dr. Parran: "I firmly believe that every health organization should have local control and that every health program should be built on the specific needs of the community it is designed to serve. But unless we do have a health organization in every community, unless the leading doctors in each state are interested enough to set its standards and the State Health Department is competent to supervise it, unless the State has federal leadership and financial assistance as merited, we shall never have an adequate national health effort against the great diseases of our day."

It would seem in order to meet the constant and insidious arguments for compulsory health insurance, that we must more definitely have the people understand its workings and application. As is stated by one of the most recent and reliable observers in England and Europe, although millions are raised, there is no more for each individual case of illness—actually there may be increasingly less from year to year.

There is definite profound interest in the future of medicine by men from all ranks in the profession from coast to coast. What is commonly present among organized medicine is a latent to acute sense of need and an incipient idea in many minds how to go forward. Each person or group is apt to have a bias, and what is common, a personal sense of pride or feeling of superiority in his own plan. That is frequently the most serious stumbling block to progress.

As it is so frequently said, in the practice of medicine nothing should come between the Doctor and his patient—one of the particular objections to socialized medicine. In a measure we know this is largely true, that the individual physician cares for the individual patient.

This as a rule does not apply to public health and sanitation, as well as the knowledge of ad-

vanced methods of treatment that is not equally acquired and understood by all physicians, but makes it all the more imperative that each physician has the opportunity of any advanced knowledge and postgraduate education that can be applied for the benefit of his patient.

There are only two sources by which this can be made available and practical, that is, the Federal Government and organized medicine. This in a way cannot be accomplished by the medical schools or with the special groups of medicine. They are neither equipped by the personnel or organization by which this can be accomplished. It would seem, then, that this can only be accomplished by our best efforts through our various medical organizations and other agencies that may be of assistance and at the present time can be kept under our control—certainly not the government.

As we all know, individual initiative is one of the characteristics of our American people. As someone has stated, for this reason it would require at least three generations to make any success in the field of social medicine. Therefore, the shortest way in which ¹¹this⁷ can be accomplished is through organized medicine itself, directed to the individual physician.

The plan that has already been used and put into effect in several states is an inspiration in its success for those who are using other plans that are not so effective.

My conclusions from the attitude of the profession downstate where I mentioned plans for more intensive training for the men individually and at their homes, was met with most enthusiastically, and I feel sure that with an establishment of this plan, postgraduate study will become popular.

¹²I now better understand the difficulties in making any definite progress during the past year in postgraduate training for the downstate men. However, I do not feel less enthusiastic about the need and even the desire of the downstate men to enjoy this privilege.

It has been fully agreed that the science and art of medicine cannot be brought to its fullest accomplishment in the undergraduate program of study. Undergraduate training and knowledge necessarily develops with practice and experience. But if the man in general practice is to maintain a reasonable knowledge of the advancement of medicine and its application to

everyday practice, he must continue to have the opportunity for educational and clinical instruction.

I do not refer to graduate work as a preparation for the specialties, but helpful courses brought to the general man who is unable to leave his home and practice for the time required for postgraduate work. This will enable him to have a keener interest in the scientific talks and papers presented before his society, as well as a desire for short courses and clinics in postgraduate medical schools when financially able.

Much of the propaganda against organized medicine today is on account of this inability of some of our profession to continue to have the advantage of clinical training, and to close this gap between the new advancement in scientific medicine today and its application to everyday practice.

With the trite saying, "Better medical service means better physicians," I believe the House of Delegates should have a temporary postgraduate committee appointed, to study the situation for one year and report back to this House of Delegates a plan.

On account of the mounting roll of the indigent part of our population, with the claims of those who proposed to speak for the Federal government as to their adequate care, the trustees of the American Medical Association suggested a plan for the more than 2,000 county medical societies of the United States, to determine the real conditions as to whether there is adequate medical care or not.

A committee was appointed from the Illinois State Medical Society and a survey started about a year ago. It was thought at the time that if this was done conscientiously it would provide more accurate statistics than had ever been obtained by any lay or governmental organization. The results of this survey in many of the states has been published each week in the J. A. M. A. I understand in our state it has been completed in Cook County. As to the results downstate, you will have a report to the House of Delegates from the committee appointed last year, as to its success or failure as a whole.

It is a pleasure to bring to your attention this year the great interest and awakening of the large group of members of the Illinois State Medical Society, that heretofore have not had

adequate recognition in the affairs of our Society and only limited opportunity of participating in its annual program.

I refer particularly to the Physicians Association of the Department of Public Welfare. Headed by a very capable and enthusiastic leader, they applied to the Council and were granted a special group organization in the State Medical Society, and have their first meeting this year.

I do not think it can be denied that organization has been the chief cornerstone and foundation of the modern advancement of scientific medicine. Should we be satisfied with this progress, which is admitted on all sides by other professions, as well as the public? I believe we can only be satisfied with greater effort in organization and scientific advancement so that we can be better prepared to deal with the intramural complications and abuses of our family affairs.

If, as has been said, medicine has made more progress in scientific discoveries in the last half century, is it not reasonable to believe that with the greater advancement in organization of all the various branches of medicine, that we shall succeed far beyond our past accomplishments, even with the disadvantage of the burden of economic medicine upon our shoulders?

We can scarcely proceed with a discussion unless we pause to express our enthusiasm and profound admiration for American medicine as we know it today. We should hold in high reverence the names of those men, who by toil and self-denial have brought to our profession the esteem and respect of the American public for our scientific attainments in the diagnosis and treatment of modern diseases.

Even early practitioners of medicine realized the great disadvantage of living unto themselves in the practice of their profession without having meetings or being organized and presenting papers for discussion, and conferring with each other in regard to their experiences with the prevailing diseases of the times. In other words, clinical knowledge and the management and treatment of diseases was only gained in this way.

I think we all realize that a small number of medical men, in their respective communities, have largely carried the responsibility of the ethics of the profession with the advancement

of scientific medicine, and have kept alive its organization.

Our problem is that the profession, in greater numbers, should feel the importance of their responsibility and give of their time and effort to improve the conditions under which they practice their profession in their respective communities.

Membership in the county medical society is the first thing necessary to make a physician conscious of his need of better methods of the practice of medicine, and his ethical responsibility to his profession and the community in which he resides. With the profession well organized, there will be a higher regard for the ethical relations that exist between its members.

What are our capacities and powers, both as individuals and as members of the medical profession, and how can we fulfill our responsibility professionally and economically to society and to the community and state in which we live? These are thoughts and problems to be considered at this, the 99th annual convention of the Illinois State Medical Society and its House of Delegates.

We need a new enlistment to increase the numbers of our medical profession, who have been trail-blazers and who have only been satisfied to build upon old plans of organization for advancement until they could see and apply the new ones.

This I would emphasize, that the more thoroughly we are organized and the more intensive our efforts to give help and assistance to all of our members, the less interference we may expect from the public, which in the last analysis means the government.

You know it is not by those who rank high in medicine, or even those who are considered average, that as a profession we are judged by the public, but by those who have had limited opportunity in preparation and inability to keep pace with the progress and advancement of medicine, and yet have the responsibilities of life and death placed in their hands.

He who is most inadequately prepared for his responsibility is without ability to understand his own limited qualifications, even in the medical profession.

This easily applies to the cults, who clamor each session of Congress or the State Legislature to bestow upon them the full rights and priv-

ileges of the responsibilities for the treatment of the sick, without the opportunity of adequate training or the preliminary qualifications, and which would also permit even their former graduates who had no training in the special branches of medicine which they now desire to have granted them, with full privilege to practice medicine in all its branches.

Will a brief review of the past give us assurance of the continued progress of medicine in the future? One of the most dependable facts upon which to build a reasonable conclusion of future medicine is the progress we made with more intensive organization during the past years, and which has been gaining with greater momentum each year. This has brought into the field constantly new ideas and better planning, with its rapid dissemination of knowledge among our profession.

It is heartening under the present circumstances that the membership of the American Medical Association has increased from less than 108,000 to about 114,000 during the past year—this in spite of the problems we have faced. These conditions seemingly have made the medical profession more conscious of the need of membership in organized medicine.

On account of the number of states and the various plans that have existed in each one for the administration of public health problems, including the care and treatment of the indigent, there must be an adjustment and adoption of those that are found to be most applicable to local difficulties.

In localities where government assistance is imperative and necessary, the planning and application of this assistance must be supervised and directed by the medical profession: the recommendations made by the reference committee of the American Medical Association, that county and district societies, with the State Societies, should be encouraged to meet the needs of their local requirements.

Although medicine has made its great advancement in spite of many handicaps, I believe present conditions indicate a more rapid advancement, as we have witnessed in the last few years in the care and treatment of diseases, and particularly in the field of therapeutics.

The most encouraging sign of the ability and determination of scientific medicine to continue

its progress is the accomplishments that have been made in the last few years.

We believed after the discovery of insulin for diabetes, liver for pernicious anemia, and the field of serums so successfully exploited, that the chemical experimental and research laboratories would not be able, for a period of time, to bring forward soon again such brilliant discoveries. But now in the field of chemotherapy, we have newer remedies placed in our hands, enabling us to successfully treat diseases that formerly tied our hands with almost 100 per cent. mortality.

Pneumonia: The age-old disease that has been the fear and scourge of the human race for centuries, that has taken such a high toll in its death-rate and has resisted all drugs and methods of treatment, has in the last half year been reduced from a death-rate of 41 per cent. to 7 per cent.

In *Pellagra*, the mortality has been reduced from 54 to 6 per cent.

The equinia type of *Encephalitis*, which is known to affect human beings, is now almost definitely known to be due to the *Culex* mosquito.

Without government interference subsidizing medicine and forcing it under the control of lay organizations to suppress individual initiative effort, I believe scientific medicine will go forward with continued intensive organization to fulfill its destiny to the American people.

I believe all of these problems are going to be carefully studied by the medical profession, that we may influence our law-makers and prevent legislation that will restrict the continued advancement of medicine in America, or in continuing our administering to all classes of society as we have done in the past.

Whatever our problems of the future may be, let us keep step in the ranks of organized medicine by having every eligible graduate of medicine become a member of his county medical society, and conduct our affairs one with another that our lines of defense may not be broken by internal strife and dissension, or unfair conduct of practice in our dealings. With this determination we will be able to successfully defend our profession from regimentation and socialized medicine.

The medical profession, with all of its many specialties, is after all combined under one great organization for the same purpose of ever in-

creasing our knowledge of the most successful manner of curing and controlling disease.

This great heritage medicine bestows upon one who has chosen to devote a life to learning the approved truths and knowledge to combat disease, and by study to add to this knowledge his own contribution to the future of medicine for the benefit of his fellowmen.

THE ADVANTAGES OF THE PHYSIOLOGICAL VIEWPOINT IN MEDICINE

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The age-old objective of medical care has been treatment which will give symptomatic relief even if it does not prove curative. The physician of today is just as conscious of this compelling objective as his predecessors and he is searching for new and helpful approaches to the problem. In the pursuit of a program one should occasionally examine critically the tools, methods and modes of thought which are being used. This is the purpose of the present discussion.

Clinical Pictures. The setting up of clinical pictures was one of the earliest attacks on a disease entity. The patients were questioned carefully, an accurate history obtained, and a meticulous physical examination made. Many such individuals were studied, the inconstant findings eliminated, and the descriptive grouping of symptoms and findings remaining were woven into the clinical picture. In many instances the picture was painted so accurately that it has been changed little during the subsequent years. To the disease entity was attached the name of the physician who first described it. Thus we have the origin of Bright's Disease, Addisonian anemia, Henoch's purpura, Laennec's cirrhosis, Hanot's cirrhosis, and many other diseases. The immediate impetus of study continued in these descriptive lines and in the search for cases that could be classified as falling under one or another class. The evolution of the clinical pictures was observed. Once a patient was classified, his disease was expected to evolve along the channels previously described.

Anatomical Basis for Disease. Under the leadership of Osler the study of the anatomical background which gave rise to the clinical picture was popularized. The physician who observed in the autopsy room a mitral valve stenosed

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down to a button-hole opening could easily understand why the patient's fingers were cyanotic, his liver large and the chest filled with rales. The blood could not get through the small opening sufficiently rapidly. Pulmonary edema and passive congestion of the liver resulted. If, again, one examines the colon in a case of far advanced ulcerative colitis, he finds that the mucosa has been largely destroyed and the wall of the gut has been infiltrated with infection. It can be seen at a glance that it is impossible to return the organ to a normal state.

So more and more examples could be cited of the great contributions of pathological anatomy to the treatment of diseased processes. In many other conditions the disease has destroyed its victim without leaving anatomical changes by which it could be identified. The pathologist then has to be content with the report that death was caused by patho-physiological rather than by patho-anatomical agents. The anatomists and zoologists were formerly content to study and describe structure and form as it was observed. More recently they have become experimental anatomists and zoologists. They modify structure and change one form into another. The same transformation is occurring in pathology and medicine. Our objectives have become the study of physiological and biological processes.

I wish to present illustrations of how the physiological approach has simplified the understanding of disease and harmonized many apparently unrelated findings.

The Thyrotoxic Patient. The thyrotoxic patient presents a good illustration. His clinical picture can be resolved into three components.

The prostration component includes muscular weakness, prostration, easy fatiguability and weight loss.

The intoxication component comprises the nervous manifestations, the sleeplessness, restlessness and the crisis. Under the circulatory component may be listed the throbbing, pounding rapid heart, the flushed skin, the pulsating arteries and later in the disease the failing circulation with a decompensating heart.

These symptoms are widely divergent and at first would not seem to be due to a common etiologic factor. If, however, one realizes that the picture simplifies itself. Thyroxin regulates the speed at which chemical reactions occur within the body. It furnishes the energy to

drive them. Thus it cannot synthesize proteins and form them into complexes which occur during the growth process. This is the function of the growth hormone of the anterior pituitary. It can, however, furnish the energy to drive these reactions. If now one applies the facilitation the disease is due to an increased secretion of a normal physiological constituent (thyroxin) then to all the metabolic processes he has an understanding of the thyrotoxic state. The prostration phenomena may be attributed largely to the depletion and exhaustion of fuel reserves. After the glycogen and fat are metabolized the proteins are requisitioned. Thus the muscles are katabolized and their atrophy and wasting is observed clinically. In the urine is found creatin, a by-product of muscular destruction. These symptoms are promptly relieved by the simple expedient of feeding the patient sufficient food for his increased requirements. For the symptoms of intoxication we have no such simple antidote as food. The nervous system is being driven at a furious rate. There is no poison to be neutralized. The nerves are responding to a normal stimulus. One's only alternative is to decrease the responsiveness of these nerves by the use of sedatives. Sedatives then become the drugs of choice rather than drugs to be avoided.

When one considers the circulatory system he is confronted with the question of "What is the goiter heart?" Obviously the goitre heart is only an overactive heart. If a patient with a normal heart develops thyrotoxicosis, the rate will be rapid, the beat forceful and the apical sound loud, vigorous and of a crescendo character. If the patient has a mitral stenosis and thyrotoxicosis, the over-activity leads early to signs of congestive heart failure. If the patient has arteriosclerotic heart disease the thyrotoxicosis may manifest itself by attacks of nocturnal dyspnea or cardiac asthma. Hence there is no characteristic clinical picture presented by the goiter heart.

The surgeon is often puzzled as to when a patient becomes a satisfactory operative risk from the cardiac viewpoint. This, of course, is not a simple question. However, there is a helpful objective test of cardiac decompensation which has been obtained from the physiologists. I refer to the test for vital capacity. This measures directly the maximum air capacity of the lungs, and inversely the quantity of blood and

fluids in the pulmonary vessels. If the vessels are engorged and the alveolar walls edematous, the vital capacity is low. With improvement in the circulation the capacity rises. A capacity of less than 50 per cent. indicates a poor state of compensation providing other causes of pulmonary pathology have been eliminated.

The Patient with Steatorrhea. The far reaching physiological effects of steatorrhea are not generally appreciated. These individuals exhibit at first bulky foul smelling clay colored stools of pasty consistency. As the condition progresses the stools become more frequent in number and of watery consistency. Droplets of oil are seen floating in the water. If there is an adequate quantity of pancreatic lipase then the stool consists chiefly of calcium salts of fatty acids (soaps) and some undigested neutral fats. The fatty acids are irritating and they produce the diarrhea. With an absence of lipase then the fat is not digested and appears in the stools largely as neutral fat. In this form the fat is less stimulating and the diarrhea less marked. The first condition has been described clinically as "Idiopathic Steatorrhea, Non Tropical Sprue or Celiac Disease." The second condition appears chiefly in pancreatic disease with the exclusion of the pancreatic juices from the bowel. Clinically a case of idiopathic steatorrhea shows the following conditions:

(a) Marked emaciation, muscular weakness, and an obvious pallor suggestive of an edema.

(b) Numbness and tingling in hands or feet with or without alteration in reflexes.

(c) Nausea, often vomiting, diarrhea which is usually painless.

(d) Anemia with a reduction or absence of free acid in gastric juice.

(e) Decalcification of skeleton with low blood calcium and occasional attacks of tetany.

(f) Edema of dependent parts, ascites, low blood proteins with often a reversal in the serum albumin and globulin.

(g) Low metabolic rate and cessation of growth if patient be a child.

Suppose we reconstruct the steps in the development of the clinical picture. The unabsorbed fatty acids produce the diarrhea. The diarrhea in turn produces nausea and vomiting and prevents further absorption of all types

of food. Failure to absorb sufficient calories gives rise to emaciation and muscular weakness. Failure to absorb foods containing Vitamin B gives rise to further bowel irritability and the neuritic symptoms (numbness, tingling and alteration in reflexes). The free fatty acids must have some base to neutralize the acid. They commandeer the calcium present in the gut and then requisition supplies from the blood stream. As the blood calcium drops the symptoms of tetany appear. To maintain the blood calcium the bones become decalcified.

After the inanition has continued for a sufficient period, the reserves of serum albumin become depleted and a nutritional anemia appears. If the deficiency is not great, there is a mild degree of subcutaneous edema! if greater, then the accumulations of fluid is larger and ascites appears.

The lowering of the metabolic rate and cessation of growth is caused by the under nutrition. If the condition has not progressed too far the individual may be restored to normal by reducing the fat in the diet to the point where it can be absorbed. This stops the diarrhea and initiates absorption of other essential food elements. Even the metabolic rate returns to normal without the use of thyroid.

When the case is unusually severe, then the recovery can be hastened by parenteral use of liver extract, vitamin B₁, Calcium and blood transfusions.

Problems in Field of Cardiology. Workers in the field of cardiology are now insisting that it should more properly be designated the field of the circulation. Although the primary defect may be in the heart, often the patient is improved by directing attention to other factors in the circulation.

Cerebral Anoxemia. Thus a man has a coronary occlusion, some four weeks later he develops difficulty in sleeping and becomes disoriented and at times actively delirious. He is given one of the barbiturates and as time passes larger and larger quantities of the drug are required to control his delirium. Finally he is admitted to the psychopathic hospital. The delirium is promptly relieved by the administration of oxygen and the withdrawal of the barbiturates. There was no obvious cyanosis

and so it was not appreciated that his symptoms were attributed to a cerebral anoxemia.

Increased Blood Volume. The patient who is on the border line of a decompensation but who actually does not show any of the classical signs of it may still be quite uncomfortable. He complains of stuffiness, abdominal fullness, and a little dyspnea. If that patient is placed on the acidifying salts and given a dose of mercurial diuretic he promptly loses these symptoms with the establishment of a diuresis. Studies made in such patients have shown that they have an increased blood volume, even though there is no edema. This volume is reduced by the diuretics and with the reduction all of the symptoms are relieved.

The Shock State of Coronary Occlusion. A man develops a coronary occlusion and promptly goes into a shock-like state with a widely dilated vascular bed. The blood pressure drops sharply. The volume of blood is inadequate to fill the vessels and the heart beats more and more rapidly in an attempt to maintain its output in the face of an inadequate venous return. One would prefer to reduce the vascular bed rather than to fill the enlarged bed and increase the blood volume. Under these circumstances small repeated doses of adrenalin may prove a life saving measure. The adrenalin facilitates an increase in arteriolar tone and in small doses dilates the coronary vessels. One, of course, must be careful to avoid the larger doses of adrenalin which may produce an anginal attack. In this particular situation the blind routine stimulation of the heart because the pulse is rapid is futile, and may lead to trouble.

Nocturnal Dyspnea. One further example of the advantages of the physiologic viewpoint is found in the common condition known as "nocturnal dyspnea and cardiac asthma." It is generally known that this condition arises as the results of acute left ventricular failure with a passive congestion of the lungs. What is not generally known is the aggravating effect of cough and deep breathing on this congestion. With cough and increase in respiration the right heart fills more rapidly and pumps more blood into the lung where a stasis exists from the left ventricular failure. Thus the cough and deep

breathing may actually induce a severe pulmonary edema or aggravate a pre-existing one.

Various explanations have been offered as to the mechanism which initiates the attack. Some of these are bad dreams, a full bladder, indigestible food and the assumption in bed of a position which mechanically embarrasses the heart action. Not infrequently arousing the patient from his sleep just before the time of the expected attack will prevent it. However, the administration of oxygen during the sleeping hours is a specific preventative measure. This insures adequate oxygenation and prevents the acute left ventricular failure.

Polycythemia. A final example will be selected from the field of hematology. The patient with polycythemia may have a red blood count of 8 to 9 million cells and a hemoglobin of 19 to 20 grams. The red cell production is so great that the volume of cells per cubic millimeter is not only well above normal, but there is actually an increase in the blood plasma required to incorporate the cells into circulating blood. This increased blood volume may easily be 30 to 40 per cent. above normal. Various methods (phenyl hydrazine and x-ray) have been used to destroy the cells after they have been found, and offer the patient symptomatic relief. Such agents have to be used repeatedly to be of any value. One of my associates has arrived at a much more fundamental solution of the problem. In the myxedematous state there is a reduction in thyroxin and a consequent failure in erythropoiesis. This is shown by the pronounced anemia in the peripheral blood and the reduction in the erythroid tissue in the bone marrow. If the polycythemic patient is made myxedematous by a total thyroidectomy, he should be cured. This has been done and the cure has been accomplished.

This analysis of disease processes rather than the end results of disease has served two purposes: It has stimulated and vitalized the medical worker because the results make obvious the corrective treatment required. In the second place it has stimulated physiologists to study physiology in the human subject rather than in the animal. The medical man is required to learn again his physiology and the physiologist must become medically conscious.

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PROGRESS IN OPHTHALMOLOGY

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The Surgery of Retinal Detachment. Probably the most outstanding achievement in ophthalmology during the past fifteen years has been the operative treatment for retinal detachment. Prior to 1929, the usual so-called conservative treatments, consisting of bedrest, blood-letting, subconjunctival injections of irritant solutions, etc. probably did not result in better than a one to two per cent. cure. The hopelessness of the prognosis was very discouraging.

We must thank Gonin of Lausanne for whatever improvement in therapy and ultimate prognosis has been made. In 1929 he reported his first series of 100 cases treated by means of his thermocautery method. He reported better than 33% cures, and made us "tear" or "hole" conscious. He was able to localize holes or tears of the retina in better than 90% of the cases examined, and correlated the presence of a retinal hole with the etiology of retinal detachment. This certainly improved our diagnostic acumen in the examination of retinæ, so that today even ophthalmological internes and neophytes are able to discern the presence of retinal tears.

As the operative treatment became more universally practiced, it was found that thermocautery surgery of the retina was not without serious complications, such as severe intraocular hemorrhages, necrosis of sclera, marked vitreous strand formation, etc. This led to further experimentation, and in 1930 Vogt of Zurich announced his galvanocautery technique, by means of an electrocautery. This method improved the number of cures reported, and decreased the number of postoperative complications. It was still necessary with this method of procedure to localize and hit the tear accurately with the cautery point. At that time most of us still had difficulty in the actual localization of the retinal tears, and our number of successful cures was materially reduced by our inability to hit the tear accurately.

In 1931 Larrison announced his development of the use of a diathermy current, using a ball electrode and surface coagulation. By this method one did not have to localize the hole so care-

fully, as the coagulating current could be safely applied over large areas of detached retina without much danger to the eyeball. Shortly afterward, Weve began to use short, sharp needles with a diathermy current, perforating through the sclera in places, to allow drainage of subretinal fluid so that the retina could drop back in place and adhere to the underlying choroid. Safar and Walker then advocated the use of individual pins which were pushed into the sclera and then had a diathermy current applied.

Guist and, later, Lindner, advocated multiple trephine openings through the sclera, and then applied weak solutions of potassium hydroxide to the exposed choroid. This method was rather time-consuming, and the amount of reaction desired in the choroid could not be accurately regulated as the alkali usually spread too far from its point of application.

Vogt in 1935 used a sharp needle connected to the negative pole of an electrolysis current. This is now called "catholysis." This current gives off bubbles into the vitreous body, which can be easily seen with an ophthalmoscope, and can be used first as an aid in localization of the tear, and then as a means of treatment. It may also be used in combination with the single needle diathermy method.

During the past ten years, we have been able to evolve our present technic, which consists of accurate hole localization, the use of the diathermy current for flat and perforating coagulation, catholysis, etc. We are now able to localize tears in a much greater number of cases, seal the tear present, and promise the patient a favorable cure in 33-75%. The number of cures reported will steadily rise as our technic is improved.

Keratoplasty or Corneal Transplants. Keratoplasty, or corneal transplantation, is the operative replacement of damaged corneal tissue by healthy corneal tissue. The operation is indicated in cases of corneal opacities or corneal irregularities, such as keratoconus and keratectasias.

In 1877, Von Hippel, described his technique of circumscribed penetrating keratoplasty. The method has never become popular, probably due to the technical difficulties involved. Between the years of 1920-1930, six papers were published in the Elschmig clinic, giving the end results in about 140 cases. The author who had seen twenty-seven of these cases performed while working

as an assistant in this clinic, knows at first hand the difficulties and uncertainties involved. Filatow published his series of cases between 1925 and 1930.

Castroviejo in 1932 elaborated upon the technic already in use, by using a double bladed knife instead of the 4 mm. circular trephine of Von Hippel. A rectangular corneal flap is used. His results have been very gratifying, especially in favorable cases. The technique can be mastered by the average good surgeon.

One of the most difficult problems involved has been in regard to the material for transplantation. Filatow has evolved the method by which eyes enucleated from patients or eyes of cadavers enucleated shortly after death can be used. The cadaver eyes have to be enucleated, according to Filatow, within a few hours after death. They may be used immediately after enucleation or preserved in citrated blood from the person from whom they were obtained, and kept at a temperature of from 4° to 6° C. above zero, to be used from twenty to fifty-six hours after death. Filatow found the corneas obtained from cadavers, even those preserved for a long time, to be just as good as those taken from living persons.

Fundus Photography. The Nordenson camera has been used since about 1926 for photographing the fundus. This has given us a method of recording accurately the changes in the fundus as seen from time to time. The real value of this method has been greatly enhanced recently by the use of Kodachrome film, so that pictures may now be made in color.

Sulfanilamide in the Treatment of Trachoma. At the last meeting of the Section on Eye of the American Medical Association, just about a year ago, one of the field workers from the Department of the Interior reported on the successful use of sulfanilamide in the treatment of trachoma amongst the Indians. Several months before this report was made, we used this therapy experimentally in a group of 25 patients who were under the control of the management of the trachoma clinics in Southern Illinois. We purposely had picked some of our most refractory cases, i. e., those who had complications such as pannus formation, keratitis, corneal ulcers, etc. We were astounded at the success we had obtained in the majority of these cases. The work was very carefully carried out under the direct supervision of an ophthalmologist who was es-

pecially versed in the treatment of this disease. The results were also reported at the Eye Section meeting. Since then, we have been employing this drug rather frequently amongst the older cases, many of which had been refractive to all other forms of therapy.

Simultaneously with the experimental group under observation down state, we ran a similar series receiving the same treatment at the Illinois Eye and Ear Infirmary. Our results were as satisfactory as those reported in Southern Illinois. During the past year, it has been found that sulfanilamide has no beneficial effect in Type I, i. e., the early form of the disease, but it has a definite beneficial value in Types II and III. The therapy consists of one-third grain per pound of body weight, divided into four or five doses for the first three or four days, after which time the dose is cut in half for the following five to seven days. Lately, we have found that a drug called prontosis, which is a derivative of sulfanilamide, acts just as well and has considerably less toxic effect upon the patient. One must be careful in using this drug, to avoid the toxic effect which sometimes occurs when the patient has an idiosyncrasy toward the drug. If toxic manifestations occur, administration of the drug should be stopped immediately. With proper care in the administration, no harmful results should occur.

Sulfanilamide in the Treatment of Gonorrheal Ophthalmia. Sulfanilamide is of great value in the treatment of gonorrheal ophthalmia when combined with adequate local therapy. Best results are obtained when a high blood sulfanilamide concentration is achieved early in the treatment and maintained long enough to secure negative eye smears.

The general treatment consists of sulfanilamide and supportive care. Sulfanilamide is given in doses of 15 grains for every 20 pounds of body weight, divided into six doses and given every four hours. One fourth to one half the twenty-four hour dose is given on admission. When given subcutaneously a 1% solution of sulfanilamide is used: 100 cc. for every 40 pounds of body weight, given every 12 hours. The concentration of sulfanilamide in the blood should be kept above 5 mg.%. These maximum doses are given until negative eye smears are obtained and the eye is obviously improved. The dosage is then gradually decreased in a period of three

days to about one third the original amount and continued on the lowered figure for another seven to ten days. This is done to prevent relapse. When acidosis is impending, sodium bicarbonate is given by mouth in the same dosage as the sulfanilamide. To detect impending acidosis, the urine is checked daily with nitrazine paper. Complete blood counts are made daily the first three days and then every third day to discover any idiosyncrasy to the drug.

Mecholyl and Prostigmine in the Treatment of Glaucoma. Most authors on glaucoma believe that miosis frees the angle of the anterior chamber and thus facilitates passage of aqueous through Schlemm's canal. In addition there may be involved specific action on blood vessels and on the formation of aqueous, since these miotics have sometimes been found to reduce tension in the glaucoma of aniridia, in secondary glaucoma with blocked pupil, and in long standing chronic glaucoma with completely closed iris angle. Their action in these cases is not always dependable.

For many years pilocarpine and eserine, occasionally combined with adrenaline, have been used in the successful treatment of glaucoma. Recently a series of cases has been reported, in which mecholyl (methylbeta-acetylcholine-chloride) sold by Merck and Company, and prostigmine ($(\text{CH}_3)_2\text{N}.\text{CO}.\text{OC}_6\text{H}_5\text{N}(\text{CH}_3)_3\text{SO}_4\text{CH}_3$) sold by Hoffmann-LaRoche Company, have been successfully used in the treatment of glaucoma.

Physiologically, acetylcholine is a rapid-acting, strong miotic, although its effect is of very short duration. Clinically, it is not practical to use acetylcholine because its action is too evanescent. For this reason, a synthetic drug, mecholyl (Merck), intimately related both chemically and physiologically to acetylcholine, has been used. It is similar to acetylcholine in action, but is much more powerful and its action persists for a much longer period. Furthermore, it is devoid of the so-called "nicotine" effect of acetylcholine. It is a direct physiological antagonist to adrenaline and atropine. The systemic effects of mecholyl may be instantly abolished by means of 1/100 grains of atropine sulphate given intravenously; and over a period of 5 to 10 minutes, if the atropine is given subcutaneously. Mecholyl is without the dangerous mydriatic action of adrenaline and it has the decided advantage of being a strong miotic. Recently, its action as a synergist to another new drug—

prostigmine—has been found to be most effective. It will bring down the tension in acute glaucoma so that surgery is more easily and safely done, and when the general blood pressure and intra-ocular vascular blood pressure do rise, one-half to one hour later, the blood vessels are relatively constricted as the pressure rises.

Although mecholyl alone has a rather evanescent action, it may be used to advantage over long periods of time as a synergist, of eserine, pilocarpine or prostigmine.

Prostigmine has a pharmacological action similar to that of eserine; namely, that it inhibits the action of "A-C"-esterase. It differs from eserine in that it does not cause so much unpleasantness locally to the patient, has a stronger miotic action, and will not deteriorate as quickly as eserine. In addition, it can be used in twice as strong a concentration as eserine and causes less systemic reaction, such as nausea, when employed frequently as drops. The miosis it produces is usually greater than that caused by equivalent concentrations of pilocarpine and eserine, especially if used in conjunction with its most marked synergist—mecholyl.

Theoretically, a maximum miosis, or tendency towards producing miosis, would be obtained by using:

1. Mecholyl to stimulate the sphincter muscle directly,
2. Prostigmine, to inhibit esterase from destroying both the mecholyl and the normally produced acetylcholine,
3. Pilocarpine for its specific action on the sphincter muscle. One might even use ergotamine tartrate subcutaneously, in addition, to paralyze the sympathetic and allow the others an absolutely free range.

For chronic use, to avoid unpleasant symptoms, similar to those caused by eserine, it is occasionally necessary to use 10% mecholyl and 3% prostigmine, instead of the 20% mecholyl and 5% prostigmine used in acute cases.

A good routine treatment for a case of acute congestive glaucoma with mecholyl and prostigmine might be outlined as follows:

1. Morphine gr. 0.25, subcutaneously, if pain is marked.
2. Mecholyl 20%, prostigmine 5%, 1 drop a. a., given every 10 minutes for seven doses. If the tension does not approach normal after one and one half hours, then inject retrobulbarly,

preferably with a retrobulbar No. 25 needle and tuberculin syringe; 0.025 gm. of mecholyl in 1 c.c. of 2% procaine.

3. Continue the drops for another five doses.

When prostigmine is not available, 0.5% eserine may be used instead, for its physiological action is similar to that of prostigmine.

Mecholyl has been used most frequently by the retrobulbar method for acute glaucoma only. This method of therapy seems to be a most effective medical way of rapidly reducing high tension in acute glaucoma whether it be primary or secondary in nature.

We are at present using these two new cholinergic drugs on a series of glaucoma patients at the Illinois Eye and Ear Infirmary.

Graduate Training in Ophthalmology. Postgraduate training in ophthalmology as it is being offered today is certainly far from satisfactory. There are neither an adequate number of teachers nor clinics or hospitals where this work can be carried out. The question of adequate graduate training is now even more complicated, due to the demands and requirements for the specialty board examinations.

The opportunity to obtain an adequate graduate training for men who are to do eye, ear, nose and throat practice in the smaller communities throughout the United States is at present most inadequate. There are not enough internships or residences available to fill the demand.

To reconcile the ideal situation with the present inadequate situation, the American Academy of Ophthalmology and Otolaryngology has committed itself to a course in home study in ophthalmic fundamentals for residents in institutions in which there is no teaching being given at present. This will be conducted similarly to the home study course that has been so successful in the training of reserve officers in the United States Army. The course will be offered gratis to the residents of institutions signifying a desire to participate and to such men as may be recommended for the course by the American Board of Ophthalmology. On the first of each month there will be sent to each registrant a list of reading to be carried out that month. At the end of that time a blue book quiz containing 10, 20 or 30 questions will be sent to him. He is to answer those questions in any way he sees fit and return the blue book to the Academy Com-

mittee who will correct, grade and return it to the registrant. The work is planned to start in six to twelve months from now, and to carry through fifty weeks. This is not ideal in any sense of the word, but it is merely a plan to fill the gap intervening between the present hopeless inadequacy and the ideal situation of the future.

58 East Washington Street.

OSTEODYSTROPHY

Osteomalacia Osteopetrosis (Marble Bones)

Report of Several Cases

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In the last ten years there has been a growing interest in diseases affecting the skeletal system and demonstrating definite pathological changes in bones. The etiological factors are still obscure although clinical evidence and data have brought to light much more added information, and a wider knowledge of many variations in some of the entities. For want of a better name, this group has been classified as the *osteodystrophies*, which probably best describes it at this time. This group of bone diseases may be generally characterized as disorders of calcium metabolism and ossification which play an important role in the growth of bone. In addition to disorders of calcium metabolism and ossification, some of the endocrines are intimately connected, but their relationship and method of function are still clothed in obscurity. Among these diseases may be grouped the following:

1. *Osteitis fibrosa cystica* (Von Recklinghausen's Disease) Local cystic disease of bone is another entity.
2. *Osteitis deformans* (Paget's Disease)
3. *Osteomalacia*
4. *Rickets*
5. *Osteogenesis imperfecta* in adults
 - a) Fragilitas ossium
 - b) Osteopsathyrosis
6. *Achondroplasia*
7. *Hereditary chondrodysplasia* (multiple cartilaginous exostoses).
8. *Osteopetrosis*—Marble bones (Albers-Schönberg's Disease)

Osteomalacia. We shall confine our remarks principally to osteomalacia and marble bones. In North America osteomalacia is essentially a rare disease, although considered fairly common on

the continent. During and after the World War, its incidence increased in many of the European countries and became fairly common. Starvation and a greatly reduced diet in food essentials are considered several of the main factors concerned with its incidence. In China osteomalacia is a fairly common disease even during peaceful conditions. For many years it was confused with osteitis fibrosa cystica, but osteomalacia is most clearly allied to rickets. Osteitis fibrosa is an endocrine disorder intimately hooked up with the activity of the parathyroid gland, whereas rickets and osteomalacia are deficiency diseases, the former occurring in children, and the latter in adults. Due to parathyroid activity, calcium is removed from bones; whereas in rickets and in osteomalacia calcium is not laid down in bones owing to lack of vitamin D—one of the prime regulators of calcium metabolism.

The disease affects those in middle life, and in the main is confined to pregnant women, or those exhausted by repeated child births: occasionally it is found in males. Osteomalacia affords a good example of the difficulty of drawing conclusions regarding the osteodystrophies. Secondary hyperplasia due to enlargement of the parathyroids occurs in an attempt to halt the deficiency of calcium in the bones, and the same hyperplastic changes in the parathyroids take place in rickets.

Roentgen Manifestations: The bones commonly affected are the pelvis, lumbar vertebrae, and the bones of the legs. From its name "bone softening," the bones are easily cut, or bent, due to loss of calcium salts. On roentgenograms, they present a faint and lace-like appearance. The trabeculae are faint and frequently cannot be traced along the length of the bones. Due to its softness, in the pelvis, the promontory of the sacrum is pushed forward and the acetabulae are pushed inward, causing marked deformity and distortion of the pelvic inlet which is narrowed, and making normal birth impossible. Due to softening, the bodies of the vertebrae are compressed and distorted causing diminished height. Then ensues deformity, disc changes, spur formation, and secondary spinal curves. In the legs, marked bowing occurs.

Clinically the symptoms most prominent are generalized pains over the entire body, and weakness. Pathological fractures may occur due to bone softening. Deformities may be present

which add to the clinical picture of recognition. Microscopically, normal bone is replaced by newly formed bone—osteoid tissue—in which there is lack of lime salts.

Case I. Herewith is presented the following case in a male:

C. P., age 38; Admitted to Woodlawn Hospital, 11/22/38; Case number 33186; Service of Dr. Thomas F. Doyle.

Chief Complaint: Irregular pains coming on at varied intervals over various parts of the body, and in the lumbar regions for the past six months.

Past History: Prior to seven years ago, patient had no complaints. Seven years ago had typical symptoms of renal colic on left side, and passed a stone. Had hematuria at that time. Was free of symptoms the next five years. Two years ago developed irregular body pains which appeared and disappeared; pains greater on right side, and of an aching character. No local pathology or tenderness elicited.—Pain not exaggerated on walking. This attack lasted two weeks, when he had another attack of pain in the lower abdomen—suprapubic region, with no gastrointestinal, or urinary difficulties. Pain exaggerated on breathing, coughing, or bending body—as in assuming sitting position when in bed. No pain felt on pressure. No jaundice, colic, or clay-colored stools. For the past six months has been having attacks of dull, aching pain in left groin and lumbar region.—No radiation to thigh. No history of renal colic. Has recurrence of pain in lumbar region and chest, exaggerated on bending back, and sitting up. Denies all diseases, except skin eruption on face for many years—*acne rosacea*. Had all teeth removed three months ago because of many apical abscesses.

Family History: No children—one child lived fourteen days, cause of death unknown.

Habits: Essentially negative. Drinks mildly.

Summary: History of renal calculus seven years ago. He passed stone at that time. Has vague symptoms at present time, mainly of left loin, lumbar spines, and chest.

Physical Examination:

Male, obese—weight 185 pounds; pulse 72; blood pressure 150/110.

Red face—*acne rosacea*.

Head, eyes, ears—negative.

Neck—no adenopathy; no thyroid enlargement.

Lungs—negative.

Heart—negative.

Abdomen—obese wall; no nausea; no tenderness; liver and spleen not felt.

Posteriorly—left kidney tender on fist percussion.

Suprapubic region—negative.

Extremities—negative. No Romberg's; Babinski negative.

Laboratory urine negative.

11-23-38 Blood count

White blood count 9,000

Red blood count 5,240,000

Hemoglobin 90%

Polymorphonuclears 79%

Small lymphocytes 21%

Wassermann negative.

Kahn negative.

11-26-38 Blood calcium 9.8 mg per 100 cc.

12-7-38 Blood culture negative after two weeks incubation.

11-25-38 Further history:

October 1936 fell and fractured right wrist.

June 1937 acute pain throughout chest with sudden onset, which continued until the present time. Seven weeks ago sudden onset of pain in mid-lumbar region—acute in character.

Roentgen Findings: (12263)

Flat G. U. T. The bones of the lumbar spines and pelvis show an unusual amount of atrophy, much greater than is seen usually in a man of 37 years of age. There is compression of the bodies of the first and second lumbar, which is very suspicious of Paget's Disease of the lumbar spines. No shadows of any stones are seen. Intravenous urography is recommended to determine the function of the kidneys.

Paget's Disease, if clinically suspected, suggests examination of the skull and long bones.

Skull. In the upper one-third of the skull is a suggestive granular appearance of the bone grain, but this is not typical of parathyroidism. No changes in the skull are suggestive of table thickening.

Dorsal Spines: Moderately extensive osteoarthritis is seen in the bodies of the dorsal vertebrae. There are multiple healed fractures of the ribs on both sides—on the right side there is still evidence of callus formation surrounding the fractured areas, especially involving the eighth to the tenth ribs posteriorly.

On the left side there are also fractures of the fourth to the seventh ribs, inclusive—some of which show partial union. On the right side there are healed fractures of the posterior ribs of the third to the fifth inclusive, and the seventh and eighth likewise,—all with deformity. Many of these represent a roentgen characteristic of pathological fractures.

Lumbar Spines: The characteristic feature is the distortion with bone atrophy of the lumbar vertebrae, especially the upper three. These variations are very suggestive of pressure changes involving the body and the discs. Moderate spurs are seen on the bodies of these vertebrae, which are secondary arthritic spurs due to disc changes. In the lateral view there is corresponding distortion of the bodies with marked disc changes.

Long Bones: In the long bones of the thighs and legs the bone architecture is essentially normal in both the tibia and femur.

Pelvis: The outstanding characteristic, in addition to the sacralization of the fifth lumbar, is the bone atrophy. The roentgen appearance shows definite pathology in the lumbar spines, prolonged pressure changes, the etiology of which is not readily determined; associated with multiple fractures of the ribs on both sides which are probably pathological.

The conditions to be considered are:

1. Osteomalacia
2. Paget's Disease

3. Pituitary tumor

4. Multiple myeloma

5. Parathyroidism.

Osteomalacia is probably the most likely.

Comment: The generalized weakness and body pains coming on over a period of two years in several attacks in a mature adult, suggests bone changes, particularly where the pain is aggravated on motion, as in deep breathing (indicated by multiple fractures and which show deformity and healing) and in sitting up, or walking, adding more weight to the spinal column and causing the pressure deformities in the lumbar region. The roentgenograms further demonstrate, bone softening, atrophy and pressure deformities consistent with the entity known as *osteomalacia*. The absence of cystic bone changes and the normal blood calcium rule out *osteitis fibrosa cystica*. Absence of bone changes in the skull and long bones rule out *Paget's disease*. A normal sella turcica and absence of pituitary tumor symptomatology, rule out pituitary tumor.

Osteopetrosis—Marble Bones (Albers-Schönberg's Disease)

Of all the osteodystrophies, this can be considered the rarest. It occurs mostly in infants and children, although Reiche described a case in a man 37 years old. The average age is between 12 and 20. Tyler and Simonds in a written communication mention a case of a young woman 23 years old who was pregnant three months (second pregnancy) and who exhibited *marble bones*, (Ref. 2). She entered the hospital under the service of Dr. Harley Anderson and reported this diagnosis. Her entire skeletal system was x-rayed by Dr. Tyler except the distal phalanges of the hands and feet, and all the bones were involved: Dr. Lockwood two years previously reported his complete findings on the same case as marble bones. The patient presented the following laboratory findings: normal blood calcium, cholesterol, and phosphorus with a red count of 3,800,000 and 75% hemoglobin.

The reason I am reporting my case is because of the rarity of the disease, and that the age of the patient is 72. About 65 cases so far have been reported in the literature (McClure and Bradley). The Roentgen picture is characteristic: normal bone trabeculae are replaced by a smooth homogeneous structure, wholly lacking the usual bone architecture, and has the appearance of chalk or marble,—hence its name. The bones lose their elasticity and fractures therefore become common. True ossification of bone lamellae and of osteoblasts is lacking, but excessive calcification occurs in osteoid tissue. All bones are dense, particularly the ends of long bones. In the cranial foramina narrowing results in optic atrophy, and other cranial nerve disturbances. Narrowing of the medullary canal leads to marked sclerosis, and anemia; hydrocephalus may be present. The teeth are usually poor. Enlargement of the liver and spleen usually occurs.

When pathologic fractures occurs, the patient usually first comes under observation, and recognition is simply a coincidence. Sometimes calcification about the ligaments occur and premature calcification of the vessels may take place. In the literature, transverse rings of

increased density, occurring at the ends of the long bones, have been described by some writers as characteristic of the disease. (Ref. 3) The children are, as a rule, poorly nourished, and are apt to die of some intercurrent disease. The cause of the disease is unknown.

In Selye's work, experimentally on animals, small doses of parathyroid extract (parathormone) are administered over long periods of time, and the bones assume similar appearances as in *marble bones*. This is explained on the basis that the increased bone formation is due to stimulation of the osteoblasts, whereas, theoretically, rarefaction is anticipated with loss of lime salts. (Ref. 1)

Case 2. Herewith is a report of case: No. 30080.

Mrs. L. K., married; age 72; born in Bishopstein, East Prussia; admitted to Woodlawn Hospital, 11/3/37; service of Dr. Lester Barnsback.

Present Complaint: One month ago the patient tripped over a carpet and fell; her left lower extremity was weak since the fall and it pained her to walk. On the day prior to admission her left limb "gave away" while walking, resulting in her being admitted the following day.

Obstetrical History: Five children; three living and two dead. One daughter is 48 years of age; one daughter age 40, and son 43, living and well. Two dead—girl twins; one child died shortly after birth, one died at the age of 16 from "flu" in 1918. Varicose veins for twenty years.

Family History: Husband's mother died in the 80's cause (?). Mrs. K's family: two brothers and self; both parents died when she was a young girl. She does not remember them and does not know the cause of death. Father died when she was 3 years of age, and her mother died when she was 8 years of age.

Past History: Small-pox as a child, does not remember any other illnesses.

Physical Examination: Only the positive findings are given. Moderate swelling of the feet and legs. The heart is enlarged both to the right and left, no murmurs; the pulse is 88, irregular and the rhythm is described as an "irregular irregularity"—auricular fibrillation. There is much swelling in the region of the left hip and considerable pain on the slightest motion. Blood pressure is 134/78. The liver is two fingers breadth below the costal margin. Abdomen—no masses, or tenderness; EKG—auricular fibrillation with considerable myocardial scarring on sclerotic basis.

Consultation—Dr. James J. Callahan

Very extensive case of marble bones with probable entire skeletal involvement. There is a sub-trochanteric fracture of the left femur with medial displacement caused by iliopsoas muscle.

Treatment: Continue the same as hip will develop callus formation, and have an excellent result in the *Schantz Osteotomy* position. Operative treatment is contraindicated because of patient's age and physical condition.

Blood Chemistry: Cholesterol 227; calcium 9.9; phosphorus 3.3. Patient enjoyed good health up to one year ago, and did her own housework.

Blood Picture. 11/4/37:

W. B. C. 10,500

R. B. C. 4,220,000

Hemoglobin 78%

Polymorphonuclears 80%

Small lymphocytes 20%

Wassermann Negative

Kolmer Negative

(accident 10-3-37) (12762-old 10687)

Roentgen findings: 11-3-37. Roentgen examination (stereoscopic A. P. plane) reveals a fracture of the shaft of the left femur at its junction with the trochanteric area, and with the long or distal fragment displaced posterior and just below the neck. Due to the fragment being driven upwards, the trochanter has ascended and is on a level with the upper border of the acetabulum. The right hip taken for comparison shows no evidence of fracture. In the pelvis, probably located behind the bladder filled with fluid, there is an oval shadow with a well defined left border which may be an enlarged pelvic organ; this area is contaminated with considerable detritus in the rectum.

The characteristic feature of this examination is the homogeneous appearance of all the bones which presents the greatest density. There is almost complete absence of bone trabeculation and very little bone marking is observed except very slightly in a portion of each iliac fossa. This marked condensation of bone has resulted in almost complete fusion in the left sacroiliac joint and to a lesser degree in the right. The lumbo-sacral joint is almost completely fused. Some of the segments in the sacrum and coccyx, however, can be made out with the condensation at its minimum point here.

A. P. Lumbar spines: A similar process of bone condensation is seen in the bodies of the lumbar spines. There is almost complete fusion of the bodies of the lower dorsal and upper two lumbar. The bone trabeculation is lost, and the spinal canal is only seen in the body of the third lumbar. The ribs present the same process to a much lesser degree. The general condensation seen in these bones does not resemble that of *Paget's Disease*; neither is it consistent with *multiple myeloma*, or bone metastases from a malignancy disease.

The roentgen appearance is more consistent with a generalized osteosclerosis although this condition appears to be essentially a disease of children. Syphilis is also another possibility, but there is nothing resembling this now to make this a definite diagnosis. Osteosclerosis is, therefore, probably the first possibility to be considered.

Summary: Pelvis and hip joints.

Fracture of left hip below trochanter with deformity.

Lumbar Spines—A. P. plane.

Generalized marble bones (osteosclerosis) etiology undetermined. Other conditions mentioned above to be considered.

Schmidt (Ref. 4) prefers to separate cases occurring in infancy and early childhood from those of adult life. He believes that cases of *marble bones* in the adult type is accompanied by changes in the blood, and blood-forming organs (osteosclerotic anemia), changes

which govern the condition; whereas in the childhood type, skeletal changes are the most significant. According to Kramer and Halpert, they believe that changes in the skeletal system are so progressive that the affected children do not live long enough to acquire complete skeletal development. The case which I am reporting does not seem to bear out the contention of Kramer and Halpert. (Ref. 5)*

(Lantern slides shown to illustrate the several cases.)

Comment: Grateful acknowledgment is made to:

Drs. Thomas F. Doyle and L. J. Barnsback for the privilege of reporting these cases.

Note: A late note from the physician reports that today, several months after the accident, the patient has fair function of the hip and is walking about. (May 5, 1939.)

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RADIUM IN THE TREATMENT OF DISEASES OF THE SKIN

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In the writer's text-book "Radium Therapy"¹ published in 1922, Chapter XVII was devoted to Radium in Dermatology.

Since that time notable improvements have been made in the methods of using radium some of which we wish to describe.

Four topics will be discussed:—1, Method of actions of radium rays; 2, Technic; 3, Dosage; 4, Treatment.

1. METHOD OF ACTION OF RADIUM RAYS

The point of attack of radium rays (or x-rays) is the cell, particularly its nucleus. The absorption of rays by a cell disturbs its structure so that it loses first its power of reproduction and later its functional and anatomical characteristics. A return to normal or death and disappearance of the cell may occur, depending on the degree of injury.

Cells are most radiosensitive as they approach or pass through the period of mitosis.

The law of Bergonié and Tribondeau postulates that immature cells and cells that are actively dividing are more susceptible to x-rays than cells that have already acquired the functional and anatomical characteristics of complete maturity.

Clinical experience indicates that the same rule holds true for gamma rays. Not only tumors with little differentiation of cells and numerous mitoses but also embryonic and granulation tissue with high reproductivity of cells are thus radiosensitive.

There are exceptions, however, to the so-called law of Bergonié and Tribondeau.

Thus lymphoid cells have limited powers of reproduction but are highly radiosensitive.

In the order of their decreasing radiosensitivity cells may be arranged as follows: lymphoid, epithelial, endothelial, connective tissue, muscle, bone, fat, nerve. (Desjardins).²

About 80 affections of the skin are more or less amenable to radium and x-rays.

The main groups of dermatoses in which these agents have been used are:

- A. Malignant tumors.
- B. Benign tumors.
- C. Hypertrophies.
- D. Inflammatory and granulomatous infiltrations.
- E. Neuroses.
- F. Affections of appendages of skin.

An attempt will be made partly on theoretical grounds to explain the action of radium rays.

(A) *Malignant Tumors.* The radiosensitivity of tumor cells corresponds closely to the radiosensitivity of the parent cells from which the tumor cells spring. Thus lymphosarcoma springing from lymphoid cells is very radiosensitive while tumors composed of nerve cells are highly radioresistant.

In the radium treatment of malignant tumors one depends on two chief factors:

(a) Direct action of the rays on the tumor cells which are often more radiosensitive than the normal cells surrounding the growth. This radiosensitivity is believed by some to be due chiefly to the more rapid division of the cancer cell.

(b) Indirect action on the tumor bed, re-

sulting in obliteration of blood vessels, stimulation of phagocytosis and production of fibrosis.

It has been shown by animal experimentation that irradiation of the surrounding tissues in addition to irradiation of the tumor itself produces better results than when the tumor alone is treated.

Clinical experience corroborates these experiments. We no longer try to screen off the surrounding tissues with lead or gold screens but we always include in the irradiation all of the area adjacent to the tumor provided the anatomical conditions permit.

For the best effects of radium there should be a good substratum of well vascularized muscular and connective tissue supporting the tumor.

(B) *Benign Tumors.* Certain relatively benign tumors such as adenoid cystic epithelioma in which the cells are mature and not actively dividing are somewhat radioresistant.

Angiomas composed chiefly of newly formed blood vessels are radiosensitive and very striking results may often be achieved with radium.

The cavernous angioma in which cells of the vessel wall are embryonic in character and rapidly dividing is more radiosensitive than the port wine type of angioma in which the cells are more mature and dividing less actively.

Keloids that are young, rapidly growing and composed chiefly of actively dividing connective tissue cells are more radiosensitive than keloids that are older and composed of more mature connective tissue cells.

Fibromas, lipomas and neuromas are practically not influenced by irradiation.

(C) *Hypertrophies.* These are often associated with hyperkeratosis. Irradiation stops excessive reproduction of cells and the hyperkeratotic areas exfoliate.

(D) *Inflammatory and Granulomatous Infiltrations.* These may be due to bacteria, e.g., tubercle bacilli or to various other causes, many of which are unknown.

Bacteria in the tissues are practically not affected by therapeutic irradiations.

Bacteria in cultures may be killed by sufficiently large doses but such doses cannot be used therapeutically without seriously injuring the tissues.

The most probable explanation of beneficial results in bacterial diseases is that the effect of irradiation is not directly on the bacteria but

on the sensitive cells of the skin or its appendages and on the infiltrating leucocytes so that antibodies and ferments are liberated and fibrosis stimulated.

A similar explanation may be invoked for other inflammatory and granulomatous infiltrations.

(E) *Neuroses.* Relief of pain under irradiation is probably due to resolution of inflammatory or malignant deposits pressing on nerves rather than to a direct action of the rays on nerve cells which are very radioresistant.

In pruritus, associated with inflammatory eruptions, relief of itching follows subsidence of the eruption.

In pruritus without visible skin changes except those due to scratching, it is difficult to explain relief of itching from irradiation unless we can assume that inflammatory changes are present in sensory nerve terminals. (Desjardins.)²

(F) *Affections of Appendages of Skin.* (a) Sweat glands: The epithelial lining is radiosensitive so that secretion may be diminished as in regional hyperhidrosis.

(b) Sebaceous glands: The epithelial lining is radiosensitive so that secretion may be decreased as in acne and seborrhoea.

(c) Hair and hair follicles: The epithelium of the hair follicles is radiosensitive so that diseased hairs may be exfoliated as in tinea tonsurans.

2. TECHNIC

One of the first principles in the use of radium is to avoid injury either through irradiation or manipulation.

A technic should be used that is surgically and radiologically correct, entails a minimum of pain and inconvenience to the patient and is at the same time efficient.

There are two chief ways of using radium: 1. surface irradiation and 2. radium "puncture."

1. *Surface Irradiation.* We cannot too strongly insist upon the fact that surface irradiation is the method of choice.

Surface irradiation may be used alone or in conjunction with other treatment. The application to the skin of irritating medicaments should be avoided, however, during irradiation.

We use radium and radon interchangeably as one milligram of metallic radium is equivalent in radiating power to one millicurie of radon.

A tumor or lesion that is radiosensitive may disappear under radium treatment without visible inflammatory reaction—the so-called “selective action” of the rays.

Some cases of angioma may be clinically cured in this way.

With tumors or lesions that are somewhat radioresistant such as squamous celled epithelioma of the lip one must usually invoke the inflammatory action of radium.

Four degrees of inflammatory reaction may

Cosmetic results are poor compared with those obtained by surface “irradiation.”

Long experience has convinced us that radium “puncture” is absolutely contraindicated in affections of the skin except under the very rarest circumstances.³ In our practice radium “puncture” is practically limited to cancer of the tongue in which we use lead radon tubules.⁴

3. DOSAGE

(a) *Gamma Rays.* The “threshold pigmentation dose” is defined as a faint bronzing of the



Fig. 1. (Left) Epithelioma of lower lip. Photo Dec. 22, 1934. (Right) Patient in Fig. 1 after surface application of radon. Clinically well over 4 years.

be distinguished although these degrees or stages of reaction pass insensibly into each other.

These stages are (a) simple erythema, (b) erythema followed by desquamation, (c) vesication or superficial ulceration, (d) deep ulceration.

The selective effect of radium should be used whenever possible in order to conserve normal tissues and spare patients unnecessary discomfort.

2. *Radium “Puncture.”* In the radium treatment of tumors, the best results are obtained by delivering a uniform dose to all the tumor cells. A homogeneous effect is best achieved by applying the radium to the surface.

The implantation of radium (or radon) needles or “seeds” of any type in the skin is traumatic and gives rise to a good deal of pain and destruction of tissue. Severe radium necrosis may be easily produced.

skin usually without reddening; the “threshold erythema” dose a faint reddening of the skin; the full “erythema dose” a sharp reddening of the skin, these effects appearing in 80% of individuals 10 days or more after exposure.⁵

The threshold erythema skin dose is about 15% greater than the threshold pigmentation dose; the full erythema skin dose about 2.6 times the threshold erythema skin dose, depending somewhat on the screening.⁶

The exact meaning of “erythema skin dose” (E.S.D.) thus varies among different radium therapists and roentgenologists.

There is no such thing as a “carcinoma dose” because carcinomas have different degrees of radiosensitivity.

One may use the term “toleration dose” (Von Groedel) which means the dose that the normal tissue will support without seriously impairing its integrity.

Neglecting for the moment the radiosensitivity of the tissues, the effect of radium applied to the skin depends on:

1. The quantity of radium.
2. Filtration.
3. Size and shape of the source.
4. Distance of the source from the surface.
5. Absorption in the apparatus.
6. Absorption in the tissues.
7. Secondary radiations in the tissues.
8. Duration of the exposure.
9. Fractionation of the dose.

1. QUANTITY

The quantity used naturally depends on the lesion and whether mild and superficial or intensive and deep effects are required.

With the larger quantities of radon, a movable lead shield is placed around the radon applicator in order to protect both patient and operator.

In the treatment of malignant tumors both small amounts of radium such as 50 mg. or mc. applied for long periods and large amounts such as 1000 mg. or mc. applied for short periods of time have been advocated.

Wickham and Degrais⁷ believed squamous celled carcinoma of the mucous membrane is best irradiated by a large quantity for a short period of time. By this method there is much less rubbing and maceration of the mucous membrane and hence less danger of causing metastasis than under the reverse conditions.

Lazarus-Barlow and Dunbar⁸ have shown experimentally in animals that a large quantity of radium acting for a short time is more destructive to normal squamous epithelial cells than a smaller quantity acting for a corresponding longer time. This principle may be applied with a certain degree of justification to the destruction of squamous celled epithelioma of the skin.

We usually treat squamous celled cancer by applying a large quantity of radium for a short period of time usually on successive or alternate days so that the desired dose is delivered in a few weeks.

2. FILTRATION

Filtration reduces the amount and changes the quality of rays reaching the tissues. The alpha rays are absorbed by the glass wall of the radon tube. Beta rays are heterogeneous and have different penetrating powers. 93.8% of the hard-

est or most penetrating beta rays are absorbed by 1 cm. of epithelial tissue.

By interposing between the radium and the skin various metallic and non-metallic screens (filters) the less penetrating rays may be arrested by filtration. In the case of a tumor in the skin or below its surface, we may thus absorb the rays of longer wave length, only the more penetrating rays of shorter wave length (gamma rays) reaching the tissues.

The screens for superficial irradiation may consist of lead or silver 0.1 mm. to 0.5 mm. thick; for deep irradiation, lead or silver 2 mm. thick.

Lead or silver screens 0.1 mm. thick absorb 50%; 0.3 mm. thick, 87.5%; 0.5 mm. thick, 96.8%; 2 mm. thick, more than 99.9% of the hard beta rays.

Brass screens 2.5 mm. thick are equivalent to lead or silver screens 2 mm. thick. Some use for deep effects a platinum screen 2 mm. thick which absorbs all of the beta and some of the softer gamma rays.

Non-metallic substances such as rubber or balsa wood, 0.5 to 6 or more cm. thick are usually placed between the metallic screen containing the radium and the skin. These serve the double purpose of maintaining the proper distance and absorbing the secondary rays of Sagnac which may be irritating or even caustic. Tables of densities of different materials may be found elsewhere.¹

3 & 4. SIZE AND SHAPE OF THE SOURCE AND DISTANCE OF THE SOURCE FROM THE SURFACE

Radium may be distributed on an applicator of almost any size or shape. Practically we limit ourselves to:

- (a) A line several mm. long, i.e. a single tube.
- (b) Several lines, i.e. several tubes.
- (c) A plane surface—tubes or plaques laid side by side.

(a) *Single Tubes.* Considering each tube as a point source the intensity of the gamma rays at a given point varies inversely as the square of the distance from the source to the surface (inverse square law).

If a radium tube 14 mm. long screened with 1 mm. of gold and 1 mm. of rubber is applied in contact with the skin the full erythema skin

dose (E.S.D.) is 118 mg. hrs.⁹ Here the radium tube is 2 mm. distant from the skin.

At 10 mm. distance the full E.S.D. is 235 mg. hrs.⁹ Here the radium tube is 12 mm. distant from the skin.

With the radium tube 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 mm. distant from the skin, E.S.D. may be calculated as approximately 130, 141, 154, 165, 177, 189, 200, 212, 228 and 235 mg. hrs. respectively.

With the radium tube 5 mm. distant from the skin the equation is: $E.S.D. = 118 + 3(235 - 118)$

————— = 154 mg. hrs. Similar calculations

10 may be made for other distances. We seldom treat malignant tumors at distances smaller than 7 mm. (2 mm. brass, silver or lead + 5 mm. balsa wood).

(b) *Several Tubes.* We have shown elsewhere¹⁰ that at distances of approximately 3 to 9 mm. from the skin an approximately uniform radiation field is obtained at the skin by placing 2 equal point sources or tubes approximately twice as far apart as their distances from the skin; three equal point sources or tubes at the corners of an equilateral triangle; four equal point sources or tubes at the corners of a square.

The sides of the triangle and of the square should be twice as long as the distances of the sources from the skin.

(c) *A Plane Surface Formed by Tubes or Plaques Laid Side by Side.* As the number of tubes is increased, e.g. to 5 or more, the effect at the skin approaches closely to that produced by a plaque or plane surface.

We have shown by mathematical calculations¹⁰ that at a distance of 6 or more cm. a point source and a radio active circular plate 4 cm. in diameter have an almost identical effect at the skin surface. At a distance of 10 cm. or more a point source and a radio active circular plate 10 cm. in diameter have an almost identical effect at the skin surface. For practical purposes it may be stated that large extended sources (15 or more tubes laid side by side) at distances of 6 or more cm. from the skin have an almost identical effect to that produced by a point source.

Experiments have been made by Failla and Quimby,¹¹ Widmann¹² and others to determine an "erythema skin dose." Failla and Quimby

applied radium applicators of various sizes and shapes with screens of different thicknesses at various distances from the skin.

TABLE 1 (FAILLA AND QUIMBY)¹¹

Threshold E.S.D. in Miligram Hours for Applicators With Filters of 2 MM. of brass and 2 MM. of rubber placed at various distances from the skin.

Dist. in cm.	Squares			Length of Sides		
	1 cm.	2 cm.	4 cm.	6 cm.	8 cm.	10 cm.
0.5	...	...	...	...	...	...
1.0	190	252	439	686	1,000	1,385
1.5	386	456	686	986	1,600	1,785
2.0	670	762	1,010	1,350	1,760	2,250
3.0	1,485	1,530	1,870	2,250	2,720	2,350
4.0	2,620	2,670	3,070	3,600	4,000	4,650
5.0	4,000	4,240	4,500	4,970	5,540	6,260
6.0	...	6,000	6,260	6,860	7,580	8,000
7.5	...	9,000	9,000	10,300	11,000	12,000
10.0	...	16,000	16,000	18,000	18,000	18,000

5. ABSORPTION IN THE APPARATUS

If a block of balsa wood of varying thickness (0.5 to 10 cm.) is placed between the radium and the skin, a certain amount of absorption of rays will take place in the balsa wood. Absorption is so small, however, that for practical purposes it may be neglected, at least for small distances such as 1 or 2 cm.

6. ABSORPTION IN THE TISSUES

Let us consider the effect of absorption in the tissues in decreasing the intensity of the irradiations below the skin surface. We may compare 1. the superficial dose, i.e. the intensity at a given point on the surface and 2. the deep dose, i.e. the intensity on the axis of the applicator at different depths in the tissues. Assume an absorption coefficient of .01 in the balsa wood; .05 in the tissues. We have shown by mathematical calculations¹⁰ that with the radium 6 cm. distant from the skin, the ratio between the superficial and deep dose at a point 10 cm. below the surface on the axis of the applicator is about 1 to 10; with the radium at 10 cm. from the skin, 1 to 6. From the standpoint of equalizing the deep dose and the superficial dose, this comparison shows the advantage of placing the radium at a considerable distance from the surface.

From a practical point of view, the more superficial the lesion, the closer to the skin the radium should be placed; the deeper the lesion, the farther away from the skin.

For superficial effects, the distance of the radium from the surface may be 0.5 to 1 cm.; for the deeper effects 1 to 6 cm.; for the deep effects, 6 to 10 cm.

As the distance of the source from the surface increases, the quantity of radium must be increased, a longer time of exposure given or both factors increased.

7. SECONDARY RADIATIONS IN THE TISSUES

It has been shown that in all mathematical calculations of the deep intensity the secondary radiations from the impingement of the primary gamma radiations upon the tissues must be taken into account.

Our own experiments¹³ lead us to believe that the secondary radiations in tissues may augment

Is the biologic effect the same if one employs a large intensity for a short time or a smaller intensity for a longer time?

According to Kroenig and Friedrich's¹⁴ experiments with x-rays, if the ratio of intensities is equal to or less than 1 to 5, the biologic effect is independent of the intensity.

Thus with gamma rays the effect of 100 mg. for 5 hours is practically the same as the effect of 500 mg. for 1 hour. For ratios greater than 1 to 5, the biologic effect is greater for the greater intensity. Thus the effect of 500 mg. for 1 hour

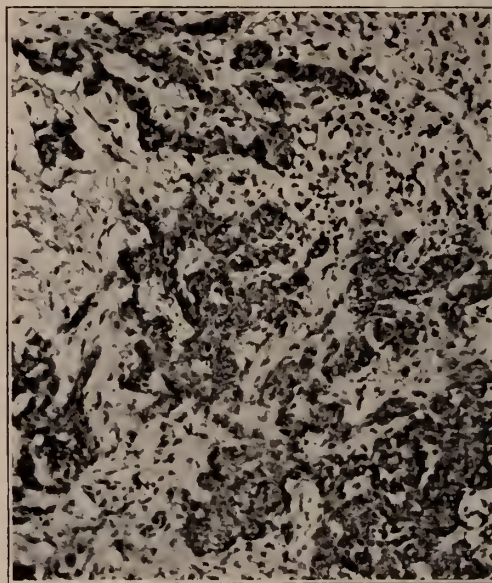


Fig. 2. (Left) Epithelioma of lip and cheek in woman aged 45. Note scars of previous operations. Under surface application of radon patient recovered and was clinically well 4½ years later. Recently a plastic operation was done by the referring surgeon to improve contour of mouth. Photo Oct. 7, 1934. (Right) Photomicrograph of section of lesion. x 120.

the effect of the primary gamma rays to such an extent that the decrease due to absorption is neutralized.

8. DURATION OF THE EXPOSURE

Milligram Hours. The terms "milligram" and "millicurie" hours are used to designate a number obtained by multiplying the number of milligrams of radium element or millicuries of radon by the number of hours of exposure.

We may neglect for the moment the decay of the radon. Thus 10 mg. or 10 mc. used for 10 hours may be expressed as 100 mg. or mc. hours (10x10).

These terms are without great meaning, however, unless the screening, the shape of the source, and especially the distance of the source from the surface are known.

is greater than the effect of 50 mg. for 10 hours.

Millicurie Hours. Radon loses approximately 16% of its activity each 24 hours.

Special standard tables showing the progressive decrease in strength of radon facilitate calculations of dosage.¹⁵

Millicuries Destroyed. In Europe instead of using the expressions milligram or millicurie hours the dose is frequently expressed in "millicuries destroyed."

A dose expressed in "millicuries destroyed" is changed into mg. hrs. or mc. hrs. by multiplying the number of "millicuries destroyed" by 133.

Thus a radiation dose of 1 mc. destroyed equals approximately 133 mg. or mc. hrs.; 2 mc. destroyed, 266 mg. or mc. hours, etc.

9. FRACTIONATION OF THE DOSE

The radiation dose may be delivered in one seance or a series of seances.

From a physical standpoint it makes little difference which method is used as the same amount of energy may be delivered by either.

1. A single short dose of high intensity, 2. a single protracted dose of low intensity or 3. a series of fractional doses may be given.

From a biologic standpoint, however, different effects are produced, depending on whether the dose is delivered in one seance or a series of seances.

In grafted tumors of the lower animals, irradiations divided into a series of doses extending over days or weeks produce more destruction of neoplastic cells and less destruction of normal cells than the same dose administered in one seance. Injury to normal cells which reproduce slowly may thus be reduced while injury to cancer cells which reproduce rapidly may be increased.

By giving fractional doses over a period of 2 to 6 weeks it has been found that the skin will tolerate a dose several times greater than could safely be given in one seance.

This does not mean, however, that small fractions of the lethal tumor dose may be given over periods of months or years.

X-RAYS

The following table shows the effect of a single dose and equal daily fractional doses given with 200 KV X-Rays.

TABLE 2 (A. REISNER)¹⁶

Various doses No. of irradiations	which produce No. of R per irradiation	the same effect in human skin. Total R	Per cent. dose
1	1000	1000	100
2	650	1300	130
3	500	1500	150
4	400	1600	160
7	300	2100	210
12	200	2400	240
27	100	2700	270

It appears to make comparatively little difference into how many equal fractions the dose is divided provided the total time (days or weeks) over which treatments extend is the same.

Thus, if a series of 4 treatments is given at 3 day intervals over a period of 12 days nearly the same effect on the skin is produced as when a series of 12 treatments is given on consecutive days provided the total dose in roentgens is the same.¹⁷

RADIUM

Our experiments with radium indicate that effects similar to those in Table 2 will be produced when gamma rays are used.

It has been found that fractional doses may produce nearly the same effect on the skin as a continuous dose of the same total amount provided the total time over which treatments extend is the same.

Thus 2 doses each of 150 mg. hours, separated by a 24 hour interval, produce approximately the same reaction in the skin as 300 mg. hours given continuously over 24 hours; 3 doses each of 115 mc. hours, separated by 48 hour intervals, produce approximately the same reaction as a continuous irradiation with 345 mc. over a period of 96 hours.¹⁸

(b) *Beta Rays.* Beta rays may be conveniently utilized by employing radium plaques which may contain 1.25 mg., 2.5 or 5 mg. of metallic radium per square centimeter of radiating surface. These plaques are respectively designated as one-fourth, one-half and full strength plaques or applicators. Beta rays are of value in many superficial skin disorders.

We seldom use unscreened radium plaques on account of the undesirability of causing inflammatory reaction and the limited power of penetration of the beta rays.

Screened with 0.1 mm. of lead which absorbs 50% of the hard beta rays, radium plaques may be applied 1. in contact with the skin or 2. at an exact distance by interposing non-metallic substances such as rubber or balsa wood blocks 0.5 to 1 or more cm. thick between the screened face of the plaque and the skin.

Although with this technic both beta and gamma rays take effect, the quantity of beta rays greatly exceeds that of gamma rays while their absorption takes place in the first centimeter of tissue.

The action of the beta rays thus preponderates over that of the gamma rays. Dosage with plaques is indicated under treatment of the various diseases of the skin.

4. TREATMENT

Some authors state there is no essential difference between the effects of gamma rays and x-rays. We have found the effects to be similar but not absolutely identical as illustrated by the superior effects of gamma rays in angiomas.

Beta rays, emitted by unscreened or slightly screened radium, are very useful in a large number of dermatoses although in practice they are always mixed with gamma rays.

Beta rays are not emitted by the x-ray tube. This subject is discussed more fully elsewhere by the writer.¹

To obtain the best results, it is perhaps needless to point out that practical knowledge of dermatology and of radiation effects is necessary.

Owing to the limits of our space, only the

Primary cancer. On clinical and histologic grounds one may distinguish 3 types—1. Basal celled epithelioma (rodent ulcer). 2. Adenocarcinoma. 3. Squamous celled Epithelioma.

1. *Rodent Ulcer*. Clinical features.

Rodent ulcer is situated usually on the upper 2/3 of the face.

The earliest lesion is microscopic. Clinically it begins *de novo* as a papule, one or more mm. in diameter, round, flat, with depressed center and unbroken skin surface, pearly gray or brownish red in color and firm to the touch.



Fig. 3. Left) Squamous celled epithelioma recurring after operation on lip and left sub-maxillary nodes of neck. Photo Sept. 18, 1936. (Right) Patient in Fig. 3 after surface application of radon. Photo Feb. 13, 1937. Six months later recurrence in nodes of left sub-maxillary region. Prognosis is poor.

methods of irradiating the more common skin affections will be discussed.

(A). MALIGNANT TUMORS

1. *Carcinoma*. Cancer of the skin may be (a) primary—arising *de novo* from the epidermis (or its glandular structures) or by transformation of a benign lesion such as keratosis senilis; (b) secondary—by extension from adjacent structures or by metastasis from distant organs.

The treatment of Paget's disease, arising by extension from carcinoma of the breast, will be described in a later paragraph.

The treatment of metastases in the skin from distant organs is similar to that advised for primary cancer.

It may remain for years without much change but sooner or later it breaks down, forming a discharging ulcer with depressed center and raised "built up" border.

It advances by progressive erosion and ulceration of successive layers of tissue.

Cartilage and bone may be destroyed. Rarely it may metastasize but only after having changed to the squamous celled type of epithelioma.

Some deny that such a transformation ever takes place.

Gumma may simulate. When doubt exists, biopsy is indicated.

Pathology. Solid columns of epithelial cells grow downward into the dermis but there is no differentiation of cells and hence, as a rule, there are no "cell nests."

2. *Adenocarcinoma*. (Adenoid cystic epithelioma.) Clinical features.

It appears usually on the face, especially on the nose, eyelids and forehead as one or more raised pearly nodules which may ulcerate. The course is chronic. It is comparatively benign.

Pathology. It is derived from the epithelium of the sweat or sebaceous glands. Microscopically, cysts appear surrounded by basal celled epithelioma. Boyd considers this type "an uncommon form of squamous cell carcinoma."

3. *Squamous Celled Epithelioma*. Clinical features.

It tends to occur at the muco-cutaneous junctions—nose, mouth, anus, vulva, etc., but also elsewhere on skin.

The earliest lesion is microscopic. It may begin *de novo* or in a precancerous lesion.

Beginning *de novo*, it appears as a papule, one or more mm. in diameter, pearly gray or brownish red in color and firm to the touch. Sooner or later ulceration occurs.

Beginning in a senile keratosis or other "precancerous lesion" malignant change may be announced by peripheral extension, thickening, scaling, cracking, crusting or bleeding. After weeks or months ulceration occurs.

One then sees a centrally depressed lesion, one or more cm. in diameter often with a polycyclic edge and raised hard border. The ulcer discharges serum, pus or blood, which may form crusts.

As in other situations, such as the lip or cervix uteri, an everted fungating or inverting, infiltrating lesion may develop. Growing rapidly or slowly, it infiltrates and destroys the deeper tissues, even cartilage and bone. It metastasizes to adjacent lymph nodes, often early and by lymphatic embolism. More rarely it may spread to distant organs by the blood stream. Gumma may simulate. When doubt exists, biopsy is indicated.

Pathology. Epithelial cells break through the basement membrane and invade the corium and deeper tissues. Well marked "cell nests" occur.

Treatment. Surgery. In basal celled epithelioma excision is seldom indicated. In adenoid cystic epithelioma, which is somewhat radioresistant, excision may be performed if irradiation fails. In squamous celled epithelioma, excision is indicated in selected cases, such as

large, deeply infiltrated lesions on back of hand, vulva, etc.

Radium. Radium is the method of choice in most epitheliomas of the skin. Surface irradiation is always used. Radium "puncture" is contraindicated. Formerly it was believed that basal celled epithelioma was radiosensitive and squamous celled epithelioma somewhat radioresistant. Lacassagne¹⁹ states that this view is incorrect, both types being responsive to radium. It is, however, more difficult to obtain a clinical cure with squamous celled epithelioma due to the greater depth of the tumor infiltration.

In diabetics, syphilitics and in patients with epithelioma previously subjected to protracted but inadequate irradiation with x-rays the response to radium treatment may be poor.

One has a choice of 3 methods in the surface irradiation of carcinoma of the skin: 1. the single short dose of high intensity, 2. the single protracted dose of low intensity, 3. the fractionated dose.

1. *The Single Short Dose of High Intensity*. This method should seldom, if ever, be used because of possible injury to normal structures.

2. *The Single Protracted Dose of Low Intensity*. Continuous irradiation, while feasible in some cases of basal celled cancer, is contraindicated in metastasizing squamous celled cancer of the skin, lip, and oral mucous membranes because of the rubbing and maceration of the tissues with the radium applicator and the consequent danger of causing metastasis.

3. *Fractionated Doses*. If a threshold erythema skin dose is produced with gamma rays in a single seance, approximately the same effect may be obtained by augmenting this dose 30% if given in 2 equal daily seances; 50% if given in 3 equal daily seances and so on (Table 2).

After theoretically augmenting the dose by fractionating it, one may give approximately 2 to 4 times this augmented dose.

Data derived from theoretical calculations must always be used with caution until sufficient experience has been accumulated.

Assume an applicator measuring 2x2 cm. containing 500 mc. screened with 2 mm. of brass is placed 1 cm. from the skin. The threshold E.S.D. = 252 mc. hrs. (Table 1).

If 12 equal consecutive daily irradiations are given, the above dose may be augmented by

240%, i.e. to 604 mc. hrs. (Table 2).

Approximately 3 threshold E.S.D. (1812 mc. hrs.) may be given.

Assume an applicator measuring 4x4 cm. and containing 500 mc. screened with 2 mm. of brass is placed 2 cm. from the skin. The threshold E.S.D. = 1010 ms. hrs. (Table 1).

If 12 equal consecutive daily irradiations are given the dose may be augmented by 240%, i.e. to 2424 mc. hrs. (Table 2). Approximately 2 to 3 E.S.D. (4848 to 7272 mc. hrs.) may be given.

TREATMENT OF EPITHELIOMA IN SPECIAL LOCATIONS

1. *Epithelioma of the Upper Eyelid.* Surgery. Usually contraindicated.

Radium. The eyes should be examined prior to treatment to guard against future claims that they have been injured by irradiation.

During radium treatment of lesions of the upper eyelid, attempts have been made to protect the eyeball by anesthetizing the conjunctiva and inserting under the closed upper lid a smooth gold screen. As ulcer of the cornea may follow this procedure, we regard it as contraindicated.

300 mc. screened with 2 mm. of brass in an applicator measuring 2x2 cm. may be applied at 1 cm. distance over the closed eyelid.

A total of approximately 1500 mc. hrs. may be cautiously given in 12 equal daily seances.

We do not favor irradiating the tumor from the inner (mucous membrane) surface of the upper eyelid.

Radium "puncture" is contraindicated.

2. *Epithelioma of Lower Eyelid.* Surgery. Usually contraindicated on account of scarring and possible ectropion.

Radium. For relative protection of the eyeball a gold screen made after the model of an artificial eye is placed over the closed upper eyelid.

The lower eyelid is gently pulled down and away from the eyeball and secured with adhesive tape.

500 mc. screened with 2 mm. of brass in an applicator measuring 2x2 cm. may be applied at 1 cm. distance.

A total of approximately 1500 mc. hrs. may be cautiously given in 12 equal daily seances.

Radium "puncture" is contraindicated.

3. *Epithelioma of Upper Lip.*²⁰ Surgery is seldom indicated.

The lesion is often basal celled and radiosensitive.

Radium is the method of choice. The technic is similar to that used for the lower lip.

Radium "puncture" is contraindicated.

4. *Epithelioma of Lower Lip.*²⁰ Surgery. The results are good, approximately 70% of cases remaining well for a 5 year period of time. There is, of course, some sacrifice of tissue. Ewing says: "Although surgical results with labial cancer are excellent radium accomplishes as much, or more, without mutilation."

Radium. Two aspects—external and internal—and sometimes 3 aspects of the lip—external, mesial and internal—may be irradiated.

Much depends on the conformation of the lesion and the flexibility of the lip which is decreased by the infiltration of the tumor.

Small Superficial Lesions.

* Factors:

Quantity = 250 to 500 mc. Screen = 2 mm. of brass.

Size of applicator = 2x2 cm. Distance = 0.5 cm.

One threshold E.S.D. = approximately 126 mc. hrs.

If number of seances = 7, add 110% = approximately 265 mc. hrs., which may be given to each of 3 aspects of lip lesion.

Large Deep Lesions.

Factors:

Quantity = 500 mc. Screen = 2 mm. of brass.

Size of applicator = 4x4 cm. Distance = 1 cm.

One threshold E.S.D. = approximately 439 mc. hrs.

If number of seances = 7, add 110% = approximately 922 mc. hrs., which may be given to each of 3 aspects of lip lesion.

It is important to irradiate several cm. beyond the tumor edge but care must be taken that the irradiations do not overlap.

No stereotyped method of using radium can be devised, however, to cover all contingencies.

Radium "puncture" is contraindicated in epithelioma of the lip.

METASTASES

Treatment. In carcinomatous involvement of

the lymph nodes, excision is the method of choice.

If the nodes are fixed and inoperable, surface irradiation may be used.

Radium "puncture" of carcinomatous lymph nodes is contraindicated.²⁰

2. MELANOMA

Melanomas are tumors arising from pigmented cells (melanoblasts) which are found chiefly in the skin and choroid coat of the eye. Melanomas may be brown, gray blue, bluish black or black in color. The pigment is melanin and elaborated by the cells themselves. Melanomas may be (a) benign or (b) malignant.

(a) *Benign Melanoma*. This term includes 1. moles (pigmented nevi), which are congenital, and 2. circumscribed pigmented spots (lentigo). The latter are to be distinguished from lentigo (freckles) in children.

The importance of a pigmented nevus or lentigo lies in the possibility of its becoming malignant. The "nevus blau" of Fieche is of bluish color, arises in the dermis and is essentially benign.

(b) *Malignant Melanoma*. This term includes 1. malignant lentigo (Hutchinson).

A smooth pigmented spot a few mm. in diameter and black in color appears in the skin or mucous membrane, e.g. on the foot or lower lip. At first apparently benign it may become malignant.

2. Malignant whitlow (Hutchinson).

One or more blackish pigmented spots or nodules appear in the nail bed under the nail or in the paronychia tissue.

The thumb and great toe are favorite sites. At first apparently benign the pigmented spot or nodule may become malignant. Malignant lentigo and whitlow are probably derived from melanoblasts in the deeper epidermal layers.

3. *Malignant pigmented mole*. A benign mole may become malignant. Malignancy in a mole may be heralded by increased pigmentation, growth, cracking, crusting, bleeding or the development of "satellite" tumors in the adjacent skin. Malignant moles were formerly regarded by Unna²¹ and others as melanocarcinomas derived from epithelial cells.

Masson²² believes a benign mole is a neuronevus and that a malignant mole is derived

from neuroectodermal rather than from epithelial cells.

Any of the foregoing malignant melanomas may ulcerate and discharge an inky black fluid. Metastases, which may be blacker than the primary tumor, may appear in the skin, lymph nodes or viscera. Odel, Montgomery and Horton²³ reported a remarkable case of diffuse melanosis secondary to malignant melanoma in which the patient's skin was so black that he had been mistaken for a negro.

4. Secondary melanoma of the skin.

The choroid coat of the eye is usually the primary seat. Secondary deposits may appear in the skin and viscera, especially the liver, which may contain hundreds of small tumors 1 or more cm. in diameter.

"Beware the man with the glass eye and enlarged liver."

The microscopic picture of these tumors is that of a melanosarcoma.

5. Idiopathic multiple pigment sarcoma. (Kaposi.)

This is found chiefly in Southern Europe, most cases in North America having been imported. The primary seat is the skin and subcutaneous tissue.

It is characterized by the appearance, chiefly on the feet and legs but also in other part of the skin, including the mucous membranes, of numerous nodules and plaques of brown, red or purplish color which may ulcerate.

It metastasizes by the blood stream to the viscera. Described by Kaposi as a pigmented sarcoma, some believe this disease is a granuloma.

Treatment of Melanoma. (a) *Benign Melanoma*. Theoretically all pigmented moles should be removed by excision. As this is seldom practicable, surgery may be limited to operable moles situated in places subjected to traumatism.

(b) *Malignant Melanoma*. A black pigmented spot developing in an adult without apparent cause should be regarded as possible "*malignant lentigo*" and excised at once. In "*malignant whitlow*" amputation of the distal joint and excision of the adjacent lymph nodes are usually indicated.

Pigmented moles that have undergone any change in physical character should be regarded as probably malignant and excised at once. Biopsy is contraindicated.

With multiple tumors excision may be impractical and irradiation may be used.

As a rule malignant melanomas are very radioresistant. Exceptions occur as in cases reported by MacKee²³ and others.

The technic of irradiation is the same as for epithelioma.

Melanoma of the eye should be treated by enucleation of the eyeball.

Kaposi's sarcoma may recover spontaneously. Surface irradiation may be used with good re-

adjacent skin. It appears as an "eczematous" looking, sharply circumscribed, moist and weeping or dry and scaly bright red patch.

It is generally regarded as a dermatosis secondary to mammary duct carcinoma rather than of dermal origin.

Treatment. Pre- and post-operative surface irradiation with radical amputation of the breast is indicated.

Radium "puncture" of the breast is contraindicated.



Fig. 4. (Left) Angioma of deep bluish red color in baby girl 11 months old. Photo Oct. 20, 1931. (Right) Patient in Fig. 4 after surface application of radium. Angioma resolved without inflammatory reaction. Photo Oct. 25, 1935.

sults. Recurrence is common, most cases terminating fatally in from 2 to 4 years.

3. XERODERMA PIGMENTOSUM

A familial disease, essentially malignant, beginning in infancy and due probably to sensitivity to sunlight.

It is characterized by the development usually on exposed areas—face and hands—of freckles, atrophic spots, telangiectasia, keratoses and epitheliomas.

Treatment. The keratoses and epitheliomas may be healed by surface treatment with radium. The disease as a rule progresses to a fatal termination in the course of some years.

4. PAGET'S DISEASE OF THE NIPPLE

This disease, essentially malignant, is situated on the nipple and areola. It may extend to the

5. SARCOMA

Sarcoma is 1/10 as common as carcinoma.

In the skin and subcutaneous tissue sarcoma, like cutaneous cancer, may be 1. primary, arising *de novo* or from transformation of a benign lesion or tumor such as neuro-fibroma, 2. secondary to sarcoma elsewhere as from the choroid coat of the eye via the blood stream.

Sarcoma of the skin and subcutaneous tissue may be (a) non-pigmented, (b) pigmented. (See Melanoma.)

Non-pigmented sarcoma may be 1. localized or 2. generalized.

1. *Localized.* One or more "fleshy lumps" occur, most often on the extremities, varying from several millimeters to many centimeters in diameter. If non-ulcerating, color of overlying skin may be normal, dusky or pinkish.

Dilated blood vessels may be seen in the overlying skin.

If ulceration occurs, a fungating "fleshy" tumor may result which is less firm than carcinoma and may be soft from extreme vascularity, intratumoral hemorrhage or mucoid degeneration.

The tumor may be movable or fixed to skin or deeper tissues.

2. *Generalized.* Several hundred tumors may occur, the affection as a whole bearing a close resemblance to mycosis fungoides, Hodgkin's disease, leukemia cutis or even leprosy.

In extensive sarcomas, fever may be present from cell degeneration and absorption of toxic products.

Pathology. As connective tissue is found in all parts of the body, sarcoma may occur in practically any structure—skin, subcutaneous tissue, fascia, muscle, tendon sheaths, cartilage or bone.

Round celled (small and large) spindle celled (small and large) giant celled and mixed celled sarcomas are described. Some pathologists object to a classification based on cell form.

Small round celled sarcomas are the most malignant i.e. the most likely to recur after excision (due to incomplete removal) and to metastasize.

Spindle celled sarcomas (fibro sarcomas) are the least malignant.

Giant and mixed celled sarcomas are intermediate in malignancy. In sarcoma, metastasis occurs especially by the blood but also by the lymph stream.

SPECIAL FORMS OF NON-PIGMENTED SARCOMA

1. *Neurogenic sarcoma.* A subcutaneous tumor arising primarily or from a neurofibroma.

Usually a single nodule is found on one of the extremities in the subcutaneous or intermuscular tissues.

Arising from cells of a nerve sheath, it is composed of spindle and polygonal cells lying in a loose stroma. Usually it recurs after excision. It metastasizes early, often to the lungs.

2. *Dermatofibrosarcoma.* A rare primary tumor of skin. Appears on trunk or limbs as infiltrated plaques, 10 or more centimeters in diameter, from which project nodules. It recurs after excision but seldom metastasizes.

3. *Synovioma.* A rare primary subcutaneous tumor. It is most often found on the hands and feet. It appears as a swelling over a tendon

and gradually enlarges but seldom exceeds 6 or 8 cm. in diameter. It arises in cells of a synovial sheath. It seldom recurs after excision and never metastasizes.

4. *Lymphosarcoma.* It begins most often in the lymph nodes of one side of the neck which become slowly enlarged. At first discrete the nodes become conglomerate sometimes forming a large irregular mass 12 or more cm. in diameter.

The skin is involved secondarily. Ulceration may occur in neglected cases.

This disease appears to take its origin from lymphoid and reticuloendothelial cells of the lymph nodes.

Some believe a primary focus often undiscovered always exists in the tonsil, nose or pharynx. Lymphosarcoma usually recurs after excision and metastasizes early.

5. *Myxosarcoma.* A term applied to a sarcoma in which the cells (and stroma) have undergone mucoid degeneration.

The tumor is boggy on palpation and may "quiver like jelly."

Treatment of Sarcoma. Surgery. If operable, all forms of sarcoma except lymphosarcoma should be treated by excision.

Radium. Pre- and post-operative irradiation is indicated.

Radium technic is the same as for carcinoma of skin.

In some cases, it may be advisable to use intensive irradiation to test the radiosensitivity of the tumor. If complete recession occurs, no further treatment may be necessary.

If the tumor persists, wide excision is indicated. Coley's serum should be used as an adjunct.

These combined methods have produced a good many isolated cures.

Inoperable tumors may be irradiated as in carcinoma.

In isolated cases, excellent results have been obtained.

Lymphosarcoma is one of the most radiosensitive of all tumors.

Irradiation is the method of choice, surgery being contraindicated.

Large masses may melt away but recurrence in other regions is common.

Permanent cures have been reported.

6. *Mycosis fungoides, Hodgkin's disease and*

leukemia of the skin may be considered for convenience under malignant neoplasms.

Treatment. Surface irradiation with 1000 or more mc. screened with 2 mm. of brass at distances of 4 to 6 cm. may be used.

Palliation for months or years or even a temporary clinical cure may be obtained. Radium "puncture" is contraindicated.

The final prognosis is grave.

(B) BENIGN TUMORS

1. *Nevus Pigmentosus (Mole).* Clinical features. Moles are congenital tumors (benign melanomas) of the skin. They may be single or multiple. Occurring most often on the face they may be found anywhere on the body. The diameter varies from 1 mm. to 10 or more centimeters. In rare cases they form large bulky tumors. They may be pigmented or non-pigmented. Frequently they contain hairs. The surface may be smooth or verrucous. They may increase in size especially at puberty. In the elderly and sometimes in the young, a mole that begins to grow or change in physical character should be regarded as malignant.

Treatment of Moles. Surgery. Wide surgical excision is indicated. Cauterization should not be used.

Radium. Radium has no selective action on pigmented nevi.

2. *Linear Nevus.* A congenital benign neoplasm occurring on the face, trunk or limbs, as variously sized, warty streaks or patches.

Treatment of Linear Nevus. Surgery. Small areas may be excised. Very extensive lesions are scarcely amenable to any type of treatment.

Radium. Lesions not over several centimeters in extent may be greatly improved by radium. Beta ray technic is indicated, the total exposure depending on the thickness and elevation of the lesion. Usually a subepithelioma dose is sufficient. Radium "puncture" is contraindicated.

3. *Keloid.* Clinical features. Keloids vary in diameter from several mm. to 10 or more centimeters sometimes forming large tumors. Beginning as a small, pinkish nodule which grows gradually, a keloid usually appears as an irregularly shaped, elevated, smooth, pinkish, cicatriform lesion with characteristic claw-like projections from the periphery.

Pathology. A fibrocellular new growth of the

corium. Some do not regard keloid as a true neoplasm.

Treatment of Keloid. Surgery. With small, slightly elevated keloids surgery is not indicated. With large, elevated bulky tumors, surgery may be necessary but should be followed by radium treatment to prevent recurrence.

Radium. With small keloids $\frac{1}{4}$ strength radium plaques screened with 0.1 mm. of lead may be used. If in contact, a total exposure of 2 to 4 hours in seances of $\frac{1}{2}$ hour each, daily or every other day, may be given. At 2 mm. distance, the total exposure may be doubled. In keloids of recent formation and in children $\frac{1}{2}$ or $\frac{1}{4}$ the above dose should be used.

With more elevated and resistant keloids gamma ray technic may be employed.

Fifty per cent threshold E.S.D. may be given.

Radium "puncture" is contraindicated.

4. *Acne Keloid (Dermatitis Papillaris Capillitii).* Situated on the nape of the neck and sometimes on the adjacent part of the occiput, this disease appears as a keloid-like tumor associated with and probably due to a sycosis vulgaris affecting this region.

Radium. Treatment is similar to that for keloid.

5. *Hemangioma (Vascular nevus).* Clinical features.

Usually congenital, hemangioma may appear a few days or weeks after birth. Occurring most commonly on the skin, it may be situated in almost any organ. In the larynx it may threaten death from suffocation. In a personal communication, Dr. B. H. Neiman reported to the writer a case of sudden death in which an angioma of the larynx causing suffocation was found post mortem. We have reported 2 cases of hemangioma of the larynx in adults successfully treated with radium.²⁴

Angiomas of the skin are of variable size and shape. The surface may be smooth or papillated, level with the skin or elevated from a few mm. to many cm. above the adjacent skin surface.

Due to the contained blood, angiomas are always some shade of red or blue.

A subcutaneous angioma may appear as a bulging tumor many cm. in diameter. Although it is usually soft, compressible and often of normal skin color, at some point the skin may be

colored blue or red, giving a clue to the diagnosis.

Pathology. An angioma is composed of newly formed blood vessels supported by a variable amount of connective tissue.

Treatment. Surgery. Usually contraindicated.

Radium. With the introduction of radium a new era was inaugurated in the treatment of angioma. In most cases radium therapy is the method of choice.

Some of its advantages are:

The lack of danger; the painlessness; the excellent cosmetic results due to the fact that a

1. Flat superficial angiomas (port wine stains). With $\frac{1}{4}$ strength glazed plaques screened with 0.1 mm. of lead 6 to 8 treatments of $\frac{1}{2}$ hour each may be given daily or on alternate days. At 2 mm. distance the time may be doubled.
2. Flat deeply infiltrating angiomas. With the same applicator, screening and distance, the above dosage may be increased by $\frac{1}{4}$.
3. Raised hard angiomas. With the same applicator, screening and distance, the dosage for flat superficial angiomas may be increased by $\frac{1}{2}$.



Fig. 5. (Left) Angioma of deep bluish red color in baby boy $5\frac{1}{2}$ months old. Note top of ear destroyed by ulceration and deformity of eyelids and mouth. Photo Feb. 7, 1938. (Right) Patient in Fig. 5 after surface application of radium. Angioma resolved without inflammatory reaction. Photo Apr. 17, 1939.

fading and leveling rather than a destruction of the tumor may often be brought about.

In favorable cases the angioma may disappear leaving little or no trace behind. Irradiation of angiomas near the epiphysis of growing bones should be carried out with extreme caution. The secret of cosmetic success in angiomas of the skin lies in the avoidance of inflammatory reactions which may result in undesirable sequelae. The writer has published²⁶ photographs of a number of cases in which good results have been obtained.

Technic. This must be greatly modified to suit the case. Surface irradiations only are used; radium "puncture" is contraindicated. If improvement does not follow mild doses, treatment should be discontinued for at least several months.

4. Raised soft angiomas.
Factors: Quantity = 500 mc. Screen = 2 mm. of brass.
Size of applicator = 2×2 cm. Distance = 2 cm.
Number of seances = 12. 50% threshold E.S.D. (approximately 914 mc. hours) may be given.
5. Deep subcutaneous angiomatous tumors.
Factors: Quantity = 1000 mc. Screen = 2 mm. of brass.
Size of applicator = 8×8 cm. Distance = 7.5 cm.
Number of seances = 12. 50% threshold E.S.D. (approximately 13,200 mc. hours) may be given.
6. *Lymphangioma.* Clinical features. It may affect different areas, the axillae, buttocks,

lip (one type of macrocheilia) and tongue (one type of macroglossia) being favorite sites. Usually congenital, it appears often as a verrucous patch, yellowish, reddish or of normal skin color a few mm. to 10 or more cm. in diameter. It is composed of straw colored vesicles which may, if injured, exude a serous fluid. Outlying lesions a few mm. in diameter may occur adjacent to the main patch.

Pathology. The lesions consist of dilated lymph vessels lined with endothelium. In some cases lymphangioma may be combined with hemangioma.

Treatment. Surgery. Lesions of small extent may be treated surgically.

Radium. In some cases radium is very efficient.

The technic is similar to that used for angioma.¹

7. *Xanthoma Palpebrarum.* A benign new growth, single or multiple, situated on the eyelids and beginning often in the left upper lid. Lesions are a few mm. to 1 or more cm. in diameter, round, oval or irregular, slightly raised with sharp outline and smooth surface, of characteristic yellow (chamois leather) color and soft to the touch.

Treatment. Some cases do well under excision. In other cases radium (beta ray technic) combined with electrolysis may be used. The ultimate prognosis must be guarded as the development of new lesions is common.

(C) HYPERTROPHIES

1. *Verruca Vulgaris (Common wart).* While the cause is unknown, warts are probably feebly infectious and antioinoculable. They occur most often in the young on the hands and fingers. A wart-like growth in an elderly person should be suspected of being an epithelioma.

Tuberculosis verrucosa cutis which may resemble the common wart is situated on a chronic inflammatory base.

Treatment. Surgery. Excision is contraindicated.

Radium. With single warts, radium is very efficient and may be used when ordinary dermatologic treatment fails. In subungual warts radium may be signally useful. Radium plaques, $\frac{1}{4}$ strength, screened with 1/10 mm. of lead may be applied in contact daily or less often for a total of 1 to 3 hours in seances of 10 to 30 min-

utes each. The surrounding skin should be carefully protected with lead foil.

With palmar or plantar warts, radium is extremely efficient. Two or 3 times the above dose may be required. On exposed skin areas, reactions should be avoided.

With multiple warts covering considerable areas, gamma rays (25% threshold E.S.D. at 4 cm. distance) may be used.

2. *Verruca Acuminata.* Caused by the irritation of simple or gonorrheal secretions, these warts are contagious and antioinoculable. They occur as a rule on the mucous membranes of the genitals as moist cock's comb-like, vegetating growths which may be a few mm. to many cm. in diameter.

They may appear in pregnant women and disappear spontaneously after parturition. The condylomata lata of syphilis may resemble them closely.

Treatment. Irradiation similar to that for common warts may be used.

3. *Verruca Plana Juvenilis.* This clinical entity is often unrecognized. Appearing most often in the young on the face and backs of the hands, the lesions are usually multiple and irregularly grouped in patches. The single lesion is a few mm. in diameter, often polygonal in shape, with flat surface and of yellowish-white, bluish, or normal skin color.

Treatment. When the lesions cover an area of only a few cm., radium plaques $\frac{1}{4}$ strength screened with 0.1 mm. of lead may be applied in contact for a total of 2 hours in 10 or 20 minute seances daily or less often. In extensive cases, gamma rays (25% threshold E.S.D. at 4 cm. distance) may be used and are sometimes very efficient.

4. *Verruca Senilis (Verruca seborrhoica)* Seborrhoic warts occur in the elderly and most often on the face, shoulders and back. They may be single or multiple.

The single lesion varies in diameter from a few mm. to 1 or more cm. is rounded in shape, sharp in outline, with a granular, flat surface, of yellowish color and smooth to the touch.

It seldom degenerates into epithelioma.

5. *Keratosis Senilis.* These keratoses occur in the elderly and most often on the face and backs of the hands. They may be single or multiple.

The single lesion varies in diameter from a few mm. to 1 or more cm., is irregularly rounded and sharply circumscribed, with flat, slightly elevated crusted surface, of yellowish-brown or black color and hard to the touch. It often degenerates into epithelioma.

Treatment. Verruca senilis and keratosis senilis may be treated with subepithelioma doses using a radium plaque of $\frac{1}{4}$ strength screened with 1/10 mm. of lead. The prognosis is excellent.

6. *Arsenical Keratoses.* These are due to the long continued ingestion of arsenic which is sometimes given for psoriasis or other chronic dermatoses. The inorganic compounds (Fowler's solution or Asiatic pills) are more often responsible for keratoses than the organic compounds. Arsenic granules have been found in the lesions.

Arsenical keratoses occur especially on the palms and soles but also in other sites. They may degenerate into epithelioma. We have seen more than 50 keratoses, in many of which epithelioma had developed, distributed over the body in a patient who had taken for years, on his own initiative, Fowler's solution for psoriasis.

Treatment. Arsenic must be discontinued. Radium may be used according to the indications.

7. *Radiation Keratoses.* These may result from long continued slight exposures to x-rays or radium even when no inflammatory reaction has been produced. They may degenerate into epithelioma.

Treatment. Surgery. In many cases radiation keratoses due to x-rays or radium should be excised. A radiation ulcer lasting a year or more is usually epitheliomatous; if on the finger or hands, excision or amputation is indicated depending on the lesion.

Radium. Radiation keratoses of small extent may be successfully treated with radium by giving a subepithelioma dose.

Fractionated doses should be used.

With a $\frac{1}{4}$ strength applicator screened with 0.1 mm. of lead, 5 to 10 minute applications in contact may be given on successive days for a total of 30 to 60 minutes.

Abbe²⁷ pointed out many years ago that small epitheliomas due to x-rays may be healed with radium.

8. *Callositas.* *Treatment.* The cause, usually intermittent pressure, should be removed.

Radium. Beta ray technic with a radium plaque is usually successful although a callosity may disappear spontaneously if the cause is removed.

9. *Corns.* *Treatment.* The cause, intermittent pressure, due usually to ill fitting shoes should be removed.

Radium. Beta ray technic with a radium plaque may be used cautiously, a subepithelioma dose being given. Radium treatment should not be persisted in if a first course is not successful.

10. *Kraurosis Vulvae.* This disorder is usually classified as an atrophy of the skin. The cause is obscure. It is characterized by atrophy of the labia, leukoplakia and intense itching. Epithelioma may develop in the kraurotic or leukoplakic areas.

Treatment. A vaginal discharge, if present, should be treated.

Surgery. Excision of the kraurotic and epitheliomatous areas is usually indicated.

Radium. Irradiation is usually contraindicated. Radium (gamma ray technic as for other regional pruritus) combined with "calamine liniment" may relieve the itching.

(D) INFLAMMATORY AND GRANULOMATOUS INFILTRATIONS

1. *Furuncles.* Surgery. The usual surgical treatment is indicated.

Irradiation. X-ray treatment is used by some authors with good results. Ten to 15% E.S.D. may be given.

We have occasionally used gamma ray treatment.

Five hundred mc. screened with 2 mm. of brass, in an applicator measuring 2x2 cm. may be applied at 2 cm. distance. Twenty-five per cent threshold E.S.D. may be given.

2. *Carbuncles.* Surgery. The usual surgical treatment is indicated.

Irradiation. We have had no personal experience with irradiation. X-ray reports appear

favorable. Twenty-five per cent E.S.D. may be given. Theoretically the radium technic used for furuncles could be used with the dosage slightly increased.

3. *Erysipelas*. The diagnosis should be made certain by one familiar with this disease. We have had no personal experience with irradiation. X-ray reports appear favorable. Twenty-five per cent E.S.D. may be given. Gamma rays could doubtless be used with similar results.

We would not rely on irradiation alone in furuncle, carbuncle or erysipelas.

minutes daily or less often. Twenty-five per cent threshold E.S.D. may be given. Mild local remedies such as calamine lotion or zinc oxide ointment should also be used.

Chronic Eczema. A red scaly patch is often found on the back of the neck or in the flexures. Many cases formerly called chronic eczema are now known as neurodermatitis. This latter term includes localized or disseminated patches 2 to 10 or more cm. in diameter which are rounded or irregular in outline, circumscribed, thickened, scaly, red in color, and accompanied by intense



Fig. 6. (Left) Blastomycosis. Clinical and microscopic diagnosis. Photo Sept. 18, 1933. (Right) Patient in Fig. 6 after surface application of radon. Clinically well over 5½ years.

4. *Eczema*. Few dermatologists agree on what the term eczema should include. For our purposes the word eczema may be applied to dermatitis of a certain clinical type in which the cause is obscure. If an external irritant is found to be the cause, the affection may be called eczematoid dermatitis.

Acute Eczema. This may be greatly benefited by x-rays or radium.

Radium. Radium plaques, ¼ strength, screened with 1/10 mm. of lead may be applied in contact for 3 minutes daily or less often. A total of 30 minutes may be given.

In some cases 1000 mc. screened with 2 mm. of brass, in an applicator measuring 6x6 cm. may be applied at a distance of 4 cm. for 10

itching. Lichen simplex chronicus (Vidal) may be included here.

An "eczematous" looking patch on one palm only may be syphilitic in origin.

Treatment. X-ray or radium treatment is usually very beneficial, x-rays being suitable for wide-spread and radium for localized lesions.

Radium. For localized patches ¼ strength radium plaques screened with 0.1 mm. of lead may be applied in contact for 5 minutes daily or less often. A total of 30 minutes may be given.

In some cases 1000 mc. screened with 2 mm. of brass, in an applicator measuring 6x6 cm. at 4 cm. distance for 20 minutes once or twice a week. Twenty-five per cent threshold E.S.D.

may be given. Striking results may sometimes be obtained from irradiation combined with soothing medicaments, such as "calamine liniment."

5. *Eczematoid Dermatitis*. On removal of the irritant spontaneous recovery usually occurs which may be hastened by soothing lotions or ointments. Irradiation is seldom indicated.

6. *Psoriasis*. X-ray or radium treatment is seldom indicated. Psoriasis being a chronic and practically incurable disease with spontaneous remissions and exacerbations, radiation sequelae may easily be produced by long continued irradiation. Ordinary dermatological treatment is much to be preferred to x-ray or radium treatment.

Psoriasis of the nail bed may be cautiously irradiated.

7. *Lichen Planus*. X-rays or radium may be very beneficial. In wide-spread lichen planus x-rays are more practical.

In localized areas and especially in lichen planus verrucosus radium is efficient in relieving the itching and hastening involution. Radium plaques, $\frac{1}{4}$ strength, screened with $\frac{1}{10}$ mm. of lead may be applied in contact daily for 10 minutes. A total of 1 hour may be given. In some cases 1000 mc. screened with 2 mm. of brass may be applied at a distance of 4 cm. daily for 20 minutes. Twenty-five per cent E.S.D. may be given.

8. *Lupus Erythematosus*. The cause is obscure. Some believe the toxins of the tubercle bacillus are responsible. In contradistinction to Lupus Vulgaris it occurs commonly in North America. It usually begins after the age of 18.

Radium may be of value in hastening involution. Only very mild irradiation should be used, reactions in the skin being avoided. Intravenous injections of thiosulphate of gold are usually efficacious although relapses are common. Mild lotions or ointments should be used in conjunction.

9. *Tuberculosis*. (a) *Lupus Vulgaris*. The cause is the tubercle bacillus.

It seldom originates in North America, most cases being imported from European and other countries.

It usually begins before puberty. Situated most frequently on the nose and cheeks, the disease usually persists for many years. A destructive lesion of the nose and cheeks beginning in an adult is usually epitheliomatous or syphilitic (gummatous). Single destructive lesions in those past 40 may be epitheliomatous; multiple lesions, syphilitic.

In order of rapidity of destruction of tissue these 3 diseases may be arranged—gumma, epithelioma, lupus vulgaris.

Treatment. In lupus of the glabrous skin, radium may be cautiously used but is inferior to the Finsen light.

In lupus of the mucous membranes radium is of value. Beta ray technic is indicated. Subepithelioma doses should be used. In lupus of the glabrous skin MacKee²⁸ uses X-rays (225 R) unfiltered every 4 weeks, varying the treatment to suit the case.

(b) *Tuberculosis Verrucosa Cutis*. It occurs commonly in North America and most often in postmortem workers and those handling tuberculous products. Beginning most frequently on the knuckle of the hand it appears as a verrucous lesion with an inflammatory base 1 or more cm. in diameter. The course is chronic.

Treatment. Radium (beta ray technic) is indicated in subepithelioma doses. The results are excellent.

(c) *Tuberculous Adenitis and Scrofuloderma*. These disorders usually affecting the nodes of the neck and overlying skin may be greatly benefited by gamma ray therapy. The dose should be fractionated and reactions in the skin avoided.

10. *Syphilis*. Radium has been used to aid resolution of gummatous lesions but is of doubtful value.

11. *Leprosy*. Irradiation of the lesions has been used but is of doubtful value.

12. *Rhinoscleroma*. It seldom originates in North America, nearly all cases being imported from Russia, South America and other countries.

We have had no personal experience with irradiation. Liberthal, MacKee and others have had excellent results. A subepithelioma dose is indicated. MacKee says:²⁸ "This annoying and

hitherto intractable disease can be permanently cured with X-rays or radium."

13. *Actinomycosis (Lumpy jaw)*. The cause is the ray fungus (actinomyces) which may gain access to the deeper tissues through a carious tooth or by attacking the tongue or other parts of the oral cavity. The subcutaneous tissue and skin of the facial or cervico-maxillary region are involved secondarily, exhibiting chronic inflammatory plaques, nodules and pustules of livid red color. The pus from the lesions contains yellowish granules the size of grains of sand composed of the ray fungus.

X-rays or radium surface irradiations (gamma rays) are indicated in intensive doses such as are suitable for deep seated epithelioma.

Potassium Iodide may be given internally.

Sulfanilamide has been used apparently successfully by E. M. Miller and E. H. Fell.²⁹

If bone is attacked the prognosis is poor.

14. *Blastomycosis*. Radium may be used as for tuberculosis verrucosa cutis. Potassium iodide may be given internally. The results of radium treatment are excellent.

15. *Sporotrichosis*. Treatment is similar to that used for blastomycosis. We have had no personal experience with irradiation. MacKee³⁰ reports excellent results from irradiation and potassium iodide internally.

(E) NEUROSES

Pruritus. Pruritus may be 1, a so-called neurosis without obvious cause; 2, a symptom of pediculosis, diabetes, liver disease, internal carcinoma, morphinism, etc.; 3, a symptom of certain inflammatory skin disorders such as eczema, lichen planus, etc.

In regional pruritus without obvious cause e.g. pruritus ani or vulvae radium or x-rays are often of great service. Anti-pruritic local applications (e.g. Ung. Resorcin comp. N.F.) may also be used.

One-quarter strength radium plaques screened with 0.1 mm. of lead may be applied in contact in 5 minute seances daily or on alternate days for a total of 30 to 60 minutes.

In some cases 500 mc. screened with 2 mm. of brass, arranged on a balsa wood block measuring 8x8 cm. may be applied at 4 cm. distance

in 15 minute seances daily or on alternate days. Twenty-five per cent threshold E.S.D. may be given. Irradiation of the testicles must be avoided. Irradiation should be discontinued if relief is not easily obtained.

(F) AFFECTIONS OF APPENDAGES OF SKIN

(a) *Sweat Glands*. Regional hyperidrosis (axillae, palms and soles).

Gamma ray irradiation may be used as for regional pruritis. Aluminum chloride in 25% aqueous solution applied every 2 or 3 days is sometimes efficacious.

(b) *Sebaceous Glands*. 1. *Acne Vulgaris*. Radium is inferior to x-rays in ease of application. Gamma ray irradiation as for regional pruritus may be used combined with the usual dermatologic measures.

2. *Acne Rosacea*. In rosacea with acneiform lesions and oily seborrhoea, radium or x-rays are often of great service.

Gamma ray irradiation as for regional pruritus may be used combined with the usual dermatologic measures.

3. *Acne Varioliformis*. Gamma ray irradiation as for regional pruritus may be used combined with the usual dermatologic measures.

(c) *Hair and Hair Follicles*. 1. *Hypertrichosis (Superfluous hair)*. Permanent alopecia can seldom if ever be obtained with radium or x-rays without permanent injury to the skin. We advise against irradiation in hypertrichosis.

2. *Sycosis Vulgaris*. In mild cases, the ordinary dermatologic treatment—depilation with forceps plus antiparasitic applications (e.g. Sulphur 10%, resorcin 5% in lanolin and vaseline)—should be used.

In severe cases, uncontrolled by such measures, depilation by radium or x-rays may be indicated.

Radium Technic. Assume following factors:

Quantity = 1000 mc. Screen = 2 mm. of brass.

Size of applicator = 4x4 cm. Distance = 4 cm.

One threshold E.S.D. (3070 mc. hrs.) may be given.

3. *Tricophytosis Barbae* (*Tinea sycosis*). Depilation of the beard with forceps, radium or x-rays combined with the usual dermatologic treatment is indicated. Radium technic similar to that for sycosis vulgaris may be used.

4. *Tricophytosis Capitis* (*Tinea tonsurans*). Depilation of the affected area with radium or x-rays combined with the usual dermatologic treatment is indicated.

Radium Technic:

Assume following factors:

Quantity = 125 mc. Screen = 2 mm. of brass.

Size of applicator = 10x10 cm. Distance = 1 cm.

One threshold E.S.D. (1385 mc. hrs.) may be given.

5. *Favus* (*Tinea favosa*). Depilation of the affected area with radium or x-rays combined with the usual dermatologic treatment is indicated.

Radium Technic:

The technic used for tricophytosis capitis may be employed.

SEQUELLAE

The skin may be injured and sequellae may develop as a result of injudicious irradiation with x-rays or radium.

Following inflammatory reactions caused by irradiation, there may occur in later months or years, recurring dermatitis, telangiectasia, persistent pigmentation, wrinkling, atrophy, scars, keratoses, ulcers or epithelioma.

Even if no inflammatory reaction has been produced, mild irradiation continued over long periods of time may cause similar effects.

Radium sequellae are usually milder in character and are seen less often than those caused by x-rays. This is probably due partly to the closer application of radium to the skin so that deeper structures are less influenced and partly to the fact that the use of radium in intensities comparable to those of x-rays is more restricted.

In affections dangerous to life one may, to a certain extent, disregard the possibilities of sequellae.

In affections not dangerous to life, risks of causing sequellae should not be taken.

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THE VENEREAL DISEASE CONTROL PROGRAM OF THE CHAMPAIGN- URBANA PUBLIC HEALTH DISTRICT

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On January 1, 1938 the Champaign-Urbana Public Health District began actual operation. With its inception a new and untried system of venereal disease control was instituted. Since this program has now been in operation for one year, it was felt timely that a report of activities should be made in order that other communities may avail themselves of our experience if they should desire instituting a similar plan. Since this presentation is intended to be purely informative, it is our intention to state all facts in a purely unbiased manner. The disadvantages will receive as equal emphasis as the advantages.

In order that the approach to the subject may be systematic, we will arrange our discussion so as to take up in sequence

1. Laboratory facilities for diagnosis.
2. Method of reporting.
3. Recording and classification of cases.
4. Distribution of drugs.
5. Plan of payment for indigent cases.
6. Follow-up of contacts and lapsed cases.
7. Epidemiology.
8. Discharge of cases as cured.
9. Duplication of reports.
10. Education.

Through contract with the Illinois Department of Health, a branch of their laboratory is located on the second floor of our headquarters. In return for quarters, heat, light, gas and janitor service, all laboratory examinations are made for the Health District. All modern facilities are available therefore for venereal disease control such as the Kahn and Wassermann tests, dark-field for primary lesions, and smears for gonorrhea.

Copies of all laboratory tests are received by us and filed. All positive reports are checked against our records to determine whether the case has been reported. Each week, if no report is received, a form letter is sent to the specified physician asking him to report the case for whom the positive laboratory report was received. This

method plus the fact that drugs are only distributed after cases have been reported, we believe, insures us of as complete reporting of venereal disease as could occur in any community. The form letter we send out on all positive laboratory reports of unreported cases is as follows:

Date.....
Dear Doctor:
Under date of..... laboratory report number.....
on your patient..... was as follows.....
We have no record of this case and would appreciate your
reporting it immediately on the customary form in order that
our files may be brought up to date.
Thanking you, I am,
Yours very truly,
.....
Director.

Both by State Law and local ordinance it is required that all cases of venereal disease be reported promptly. Such reports are made directly to the Health District. After the case is recorded, the original copy is forwarded to the Illinois Department of Health at Springfield, Illinois. Blanks for the reporting of venereal disease are supplied gratis to physicians by the State Department of Health.

In our recording of venereal disease reported, we employ a Kardex system. The cases are filed according to physician. A separate file is maintained for cases of syphilis and cases of gonorrhea. For syphilis the cards contain all essential information as obtained from the original report received from the physicians. By means of differently colored signals we are able to make certain classifications of cases. For example a green signal at the left hand corner indicates a private case, a red signal indicates cases paid for by the Health District, and white indicates the cases paid for by the supervisor. A red signal at the right hand corner indicates a primary or secondary case. At the bottom of the card the names of the months are listed. A striped signal is employed to indicate whether the patient is under treatment during the current month. This signal is moved month by month as treatment progresses. If the case has lapsed the black and white signal is replaced by a blue signal which not only indicates discontinuance of treatment, but also the fact that the case is being investigated. When standard treatment has been completed and until final discharge of patient, the black and white signal is allowed to remain at month treatment was stopped until final disposition of case. A similar record is kept of cases of gonorrhea. If the attending physician is being

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From the Department of Pathology, Bacteriology and Public Health, University of Illinois, College of Medicine.

Our letter in regard to cases of gonorrhea and syphilis released is as follows:

Dear Doctor..... Date.....

Kindly indicate below any cases of syphilis or gonorrhea released by you as cured during the past month, and forward this form to us with your requisition for drugs. This information will aid us in clearing our files of inactive cases.

State Serial Number	Date Released
.....
.....
.....

Yours very truly,

.....
Director.

We of course have always been aware of duplication in reporting of venereal disease, particularly syphilis, and so we maintain an unusual alertness in this regard. This of course relates primarily to change of residence, or change of physician in the same community. It is not unusual to find the same case reported two or three times. As this fact is determined our records are corrected and the information forwarded to the Illinois Department of Health.

Insofar as education is concerned, we pursue the commonly accepted methods of distributing pamphlets, lectures, informal talks, newspaper articles and talking pictures.

Initially it can be said that our program is working with complete satisfaction to all concerned. Not only indigents but those ordinarily classed as borderline have available immediate medical care for venereal disease. The individual may choose his own physician in whom he has explicit confidence. The patient is relieved of any fear of discrimination which might be associated with a clinic inasmuch as the reason for his visit to the physician is not public knowledge. We believe that lapsed cases are fewer in our program than with a venereal disease clinic, and we believe it is easier to return a lapsed case to the private physician than to a clinic. Cases of venereal disease are placed under treatment rapidly which is of distinct advantage in rendering such cases non-infectious and preventing further spread. We have complete cooperation of the physicians in reporting, systematic treatment, and release, because each physician feels that he is a material part of the program, and knows that success or failure reverts to the attitude of each member of the medical profession. The physician retains that personal relationship with the patient which is to be desired in medical practice. Last but not least those

funds expended for the care of such cases are well distributed throughout the medical profession to those interested in such type of work.

The objection might be raised that we do not have as complete records as are maintained in a venereal disease clinic. To the contrary, however, we have complete information as to family history, immediate family, income, type of employment, source of infection, contacts, treatment including follow up serology and release. It should also be stated that this information is kept as a cross file to the previously mentioned recording of cases by physician and serial number. We do not have any means of checking on whether the patient's urine is examined regularly for albumin nor do we have available means of running icteric indices. It is assumed that the physician acquainted with modern methods of anti-syphilitic treatment, will regularly examine the patient's urine for albumin. We of course do not have available the means of obtaining Kahn tests from large groups of individuals such as observed in some of the surveys carried on in other communities. Much of this type of work has centered around industry and we are distinctly not an industrial community. We are able to obtain serologic checks on the immediate family of cases of syphilis and other contacts. One phase in which we are distinctly lacking is in regard to combating congenital syphilis by early identification of the disease in the expectant mother and proper treatment before delivery. As soon as our maternal hygiene clinic materializes, this problem will of course be solved. In closing, mention should be made that we are of course restricted by our budget to treatment of a limited number of cases. Our case load cannot comfortably exceed more than approximately 50 cases at any one time.

THE IMPORTANCE OF MILK OF LOW CURD TENSION IN INFANT FEEDING

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Recognition of the importance of the physical character of curd formed in the human stomach is a significant recent advance in the study of the digestion and consequent nutritional value of milk.

*Maternal hygiene clinic began operation on April 26, 1939.

Publication of Brennemann's treatise¹ two and one-half decades ago aroused serious interest in the digestibility of raw milk. The subject has received much attention both in dairy research and in infant feeding during the intervening years. The clinical observations that the vomitus of infants fed cow's milk raw contains hard leathery curds of large size, convinced the investigators² that milk, ordinarily considered a fluid, more logically should be thought of as a solid food. In support of this view, Talbot³ showed experimentally that soon after it reached the stomach, milk forms clots or "hard, tough curds" and that the latter are casein complexes. Subsequent investigation disclosed that the physical character of these clots or curds is the important factor in the gastric digestion of milk.⁴ The size and toughness of the curd is one of the important elements influencing the emptying time of the stomach of the infant after a milk feeding.

Since Brennemann's pioneer experiments, which proved that boiled, in contrast to raw milk, formed a finer casein suspension in the stomach, simulating human milk in this behavior, laboratory methods have been disclosed for the quantitative determination of the degree of hardness of curds, i.e., an *in vitro* method of determining the type of curd which forms when a given milk is fed.

This has opened a field for research into the factors influencing the curd tension, curd flocculence, toughness and size. As this knowledge has increased, ways and means of producing "low curd tension milk" which more adequately meets the infant's digestive requirements have been introduced. The most recent of these efforts utilizing the enzylac method, perfected jointly by the American Seal-Kap Corporation and the Armour Laboratories, has resulted in the production of a modified milk of uniform low curd tension. This milk is marketed as "soft curd milk produced by the enzylac process" or under the trade name of enzylac. In my experience and that of my co-workers, Dr. Howard Jacobs and Dr. Ellis Harris, over a period of twenty months, during which it has been fed to a carefully observed group of more than five hundred children, it has proved easily digestible, well tolerated, and well utilized. The group observed included prematures, normal new-born (initial feeding and continued diet) and older children.

Milk has been and still is the best substance that nature has produced for food alone, and the most nearly perfect food for infants and children. It is one food for which no satisfactory substitute has been developed. It is obvious that milk is more valuable as a food if it is made more easily digestible. The results of over eighteen years of research have indicated that human digestion of milk varies directly with the softness of the curd, all other factors being equal. Curd character, therefore becomes an accurate index of the digestibility of cow's milk.

Physicians, aware of the infant's difficulty in digesting unmodified cow's milk, have practiced milk modification for many years in an effort to find a suitable substitute for mother's milk. Dilution, alkalization, acidulation, additions of cereals, lime water, and certain colloids such as pure gelatin, or special processes such as homogenization and base exchange treatment have been tried and found more or less successful. The purpose of all of these methods was to soften the tough, large curd of cow's milk and to make it behave more nearly like that of human milk when it entered the infant's stomach. Peptic digestion of the curd is thought to be a peripheral process. The greater the exposed surface of the protein coagula to the normal gastric secretions, the more rapidly digestion proceeds. This has been proved by experiments both *in vitro* and *in vivo*. They showed that "soft curd" milk i. e., milk so modified that its casein curds had become smaller and softer, was more easily digested than were the curds formed under like conditions from hard curd milk, because the soft, flocculent curds of the modified milk exposed a greater surface to the gastric juices.

The results of these experiments left the physician and nutritionist with the conviction that the digestion and consequent nutrition of the infant and growing child could be better facilitated by feeding a soft curd, low curd tension, milk.

Curd hardness, or tension of cow's milk is a varying factor. It differs with the different breeds of cattle and is affected by type of feeding, climate, season, period of lactation, and numerous other physical, physiological, and pathological conditions. Natural soft curd milk is said to be found in individuals of all breeds but predominates in the Holstein, Ayreshires, Guernseys, and Jerseys in the order named.

Hardness varies within relatively large limits, and numerous methods of its estimation have been devised.

The Hill curd test⁵ is of interest because it was the first American method perfected. This method makes use of a special curd knife to estimate the toughness of the curd formed after the addition of calcium and acid to the specimen. It operates by registering in grams the force required to pull the multiblade knife through the coagulated milk. This method is not entirely satisfactory, because it calls for a large addition of calcium which under certain circumstances increases the reading. David Miller recommended the use of a hydrochloric acid pepsin coagulant. A committee of the American Dairy Science Association appointed for the purpose of investigating this subject reported favorably on this coagulant at the Annual Meeting, June, 1938. Their report gives the details of the technique.

The importance of an accurate method of measuring curd tension takes on particular significance because several ways of reducing it exist. The establishment of a standard method of determination affords the physician an opportunity to select the milk which meets his requirements. The method used by the authors employs the curdometer perfected by the Submarine Signal Corporation. The milk is coagulated by the use of hydrochloric acid and pepsin. This simulates the normal coagulation which takes place in the infant's stomach. The instrument is a sensitive one and its movements electrically controlled. It has proved satisfactory in our hands.

Amongst the numerous methods developed in the past for making cow's milk more easily digestible were those utilizing the action of digestive enzymes. As an example of such milks may be cited Finkelstein's Eiweiss, Chymogen and peptonized milk. Their usefulness was based upon the fact that curd formation in milk follows laws similar to those of jelling of irreversible colloids. In making them, an enzyme was introduced to form the curd which was then finely broken by mechanical mixing and the process of further digestion stopped by heat. Since curds when once formed do not tend to agglomerate firmly, this method produces a small, pre-formed curd which remains fine in the stomach. Obviously, such milk has a low

curd tension but having an off-flavor is objected to by all but the youngest infants. The process of making these formulas is both tedious and intricate.

The more recent method of introducing a special proteolytic enzyme into raw milk in the holding tank before pasteurization overcomes these objections.⁶ The pasteurization temperature stops the enzyme action before obvious curds are produced. Curd tension may be reduced by this process to any desired low limit. The soft, small, flocculent curd which results when enzyme treated milk is fed, and the convenience of being able to purchase this product direct from the dairy, favors its use.

A modified milk, to merit the pediatrician's recommendation, must meet certain specifications. It should contain all of the elements present in cow's milk and retain or be an improvement upon the natural flavor. While a curd tension of less than 30 as measured by the Hill test is considered to be a soft curd milk, experience has proved that a curd tension of less than 20 grams give uniformly good feeding results. If in addition to easy digestibility its modification for individual formulas is simple and practical, it is certain to prove a useful adjunct in infant feeding.

The enzyme treated milk with which we have been feeding our infants during the past eighteen months meets these requirements. None of the food elements is removed. It has the same coloric value as untreated cow's milk and it need not be boiled and cooled in the preparation of the formula. This eliminates labor and reduces the possibility of human contamination during handling. This is a factor of no inconsiderable importance since milk raised to the boiling point and contaminated while warm furnishes an unusually good media for the growth of bacteria. In contrast, a commercial pasteurized soft curd milk, produced and bottled under modern sanitary conditions, delivered to the home at a low temperature, and kept at that temperature, offers the minimum possibility for the growth of bacteria.

In using a commercial milk of low curd tension, labor and cost of boiling formulas for infants' feeding is eliminated. Holding it at a temperature below 50 degrees C. and adding water and sugar mixtures of like low tempera-

tures lessens the danger of rapid bacterial multiplication. The dairy industry, public health authorities, and all others who have engaged in milk research are in accord on the effectiveness of the bacteriastatic value of low temperatures in the control of indigenous and contaminating flora in milk. The usefulness of enzymac as a basic infant food and supplement to the diet of older children brings the advantage of safety, digestibility, economy, and convenience. It is of clinical interest that undigested protein curds do not appear in the stools of infants fed with this milk. This is offered as evidence of the digestibility of the casein component.

Studies *in vitro*⁷ show that the rate of breakdown of curds from milks with either soft or hard curd tensions is slow at the higher pH level⁶ although soft curd milk is acted upon more quickly. Digestion of peptic curds is believed to be a peripheral process. It is apparent that soft curd milk which forms small curds exposes a greater surface per unit of protein casein to the digestive juices than does hard curd milk with its larger and firmer coagulum. Because of this physical difference peristalsis tends to increase the exposed surface of the softer curd in contrast with that formed from high tension milk which is not so easily mechanically distintegrated.

Espie and Die,² in a series of experiments, were able to show that doubling the curd tension of milk increases the length of the digestive period from 30 to 65 per cent., and gave as their opinion that the reduction in duration of the digestive period was due entirely to reduction in hardness of curd. Doan and Welsh,¹¹ studying the problems of soft curd milk by observing the emptying time of the stomach, concluded after a series of regurgitation experiments that soft curd milk leaves less residue in the stomach after a given interval than does milk having a high curd tension.

Jeans and Stearns showed that soft curd milk is of value in the feeding of infants as judged by growth, general condition and retention of nitrogen, calcium and phosphorus. These authors concluded that in general milks which form soft curds are well tolerated and utilized by infants and children.

Hill⁵ and Morris and Richardson,⁸ Jeans, Stearns, et al,⁹ working with soft curd milk modified by various methods have all reported

clinical success in the feeding of normal infants and have in their clinical studies furnished undeniable evidence that a soft curd milk is easily digested by infants, children, convalescents, and older persons. They expressed the opinion that milk of low curd tension leaves the stomach more quickly than does milk not having this property, and that this is undoubtedly due to the better digestibility of soft curd milk in the stomach.

At the completion of our tests with enzymac¹⁰ the results were summarized as follows:

1. The growth and development of infants fed enzymac compared favorably with those of the control group.

2. There was a statistically significant difference in the average number of stools per day in the two groups. Those fed enzymac had fewer stools.

3. The hemoglobin and erythrocyte curves of both groups are similar and normal.

4. The blood calcium and phosphorous curves of both groups followed normal levels.

5. Based upon these observations it is therefore concluded that commercial pasteurized milk with a curd tension reduced to below 20 grams by proteolytic enzyme action is desirable for infant feeding, since it is well tolerated and digested, and in addition, easily, economically and safely prepared. In its preparation the bacteriastatic value of handling a food product at a low temperature is utilized in contrast to making the milk soft curd by boiling and allowing to cool slowly.

185 North Wabash.

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CONVULSIONS UNDER ANESTHESIA

With the Report of Four Cases

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That there has been a steadily increasing interest in the problem of convulsions under anesthesia is evidenced by the large number of cases reported during the past ten years, particularly in the British medical literature. Prior to that time very little was written upon this subject, it being a matter of conjecture whether this was due to failure of observation or that this condition did not arise as often as it does today.

A majority of the cases reported are of children, a large number of whom were toxic patients, frequently suffering from gangrenous appendicitis with a generalized peritonitis.

The anesthetic usually employed when this complication has arisen is ether; therefore the term "ether convulsions" has come to be used, although the same condition has been observed with other general anesthetics. The syndrome has been rather uniformly described, but its causation and treatment would seem to vary with each commentator, indicating that the proper treatment is still a matter of wide dispute.

These convulsions are not to be confused with muscular twitchings which may occur during the induction of the anesthesia and subside as the anesthesia deepens. The true convulsions do not ordinarily begin until the patient is under deep anesthesia and often occur towards the end of the operation. There also may be repeated attacks of these convulsions, sometimes subsiding until the patient is removed from the operating room, when they may again recur.

In typical cases, the first signs of impending danger are usually observed by the anesthetist as minor twitchings of the facial muscles which may gradually increase in severity, spreading downward to the upper extremities and then include the trunk and lower extremities.

Convulsions under anesthesia are both clonic

and tonic, and may become so severe as to interrupt the surgery until the movements have diminished or subsided. The pupils of the patient's eyes become widely dilated and fixed, and the temperature often rises rapidly, reaching 105° or 106° within a very few minutes while the pulse is correspondingly accelerated. The case may go on to fatal termination with the first convulsion which usually lasts from two to four minutes; or it may subside only to be followed by other similar convulsions which may or may not be fatal.

As yet the treatment for this condition is admittedly unsatisfactory, and it will probably remain so until the exact cause is known. Many theories have been advanced in an attempt to explain the syndrome and to give a basis for its treatment. Theories which have been given the most serious consideration are:

1. Impurities in the ether. Particularly aldehyde and peroxide have been thought to be responsible. This, however, has been disproven by controlled chemical analyses.

2. Idiosyncrasy of certain types of patients to ether.

3. Excessive loss of carbon dioxide, producing lowered serum calcium and thus "tetany-like" convulsions. On this basis calcium salts have been administered.

4. Hyperthermia. Many patients have developed very high temperatures after being on the operating table for but a very short time. Therefore, cooling of the operating room and sponging of the patients have been advised as remedial measures.

5. Toxemia. Numerous cases have occurred in very septic patients. With these, the minimum amount of surgery is advised; for instance drainage only in ruptured appendicitis cases with generalized peritonitis.

6. Surgical trauma. Undue handling of tissues has been thought to induce convulsions in certain cases.

7. Hypoglycemia. This may be a result and not a cause of the convulsions. Intravenous glucose solutions have been administered to allay this condition.

8. Over-oxygenation. Allowing the cells of the medulla to absorb more ether in the presence of excess oxygen.

9. Atropine over-dosage.

10. Instability of the nervous system.

It will be noted that organic lesions of the brain have not been included in the above enumeration of causes of convulsions under anesthesia. Some cases have been reported in which autopsy has revealed brain tumors, which usually showed hemorrhage as the primary cause of the convulsion and death. However, in our series of cases there was no previous history of convulsions nor any symptoms referable to the central nervous system. Also, the two cases which had survived, developed no further convulsions and no symptoms which might be explained on an organic basis.

Many other theories in regard to convulsions under anesthesia have been offered—some of which conflict with others—but as yet none of these are sufficiently proven to warrant their discussion here. Whether alone, or in combination, any of the theories enumerated above can explain this problem is a controversial matter; but they probably will serve as a starting point for the solution. When we consider that almost fifty per cent. of these cases terminate fatally, one may readily appreciate the seriousness of this complication. The following four case reports are presented with the hope that they contribute to what is already known on this important subject.

REPORT 1. A five-year-old female entered the hospital on March 1, 1937, with a history of an acute illness consisting of vomiting, generalized abdominal pain and fever of three days' duration. Five hours before entrance, the abdomen had become distended. The temperature was 102° and the white blood count, 21,250, with 97% neutrophils. The physical findings were mainly in the abdomen and consisted of marked distention with a moderate generalized tenderness and rigidity which was most marked over McBurney's point.

A diagnosis of acute appendicitis was made and surgery resorted to. The anesthetic used was ethylene and ether. Upon opening the abdomen, an acutely inflamed gangrenous appendix, perforated at the base and with free, purulent fluid in the abdomen, was found. When the appendix was being clamped, the patient suddenly became cyanotic and started to twitch in the muscles of the face, soon followed by convulsive movements of the arms. The anesthetic was stopped, oxygen administered and the convulsions diminished. But as soon as the anesthetic was resumed and deepened, the convulsions recurred to such an extent that it was again necessary to discontinue the ether. These seizures lasted from two to three minutes.

The operation was completed under very light anesthesia and a drain inserted. Then, while the patient was still on the operating table, there occurred a third

and very severe convulsion, in which practically the entire body was involved. The pupils were dilated and fixed, and the patient vomited much dark brown fluid material. This convulsion lasted from three to four minutes.

Calcium gulconate was administered, as was glucose solution. There were recurrences of the convulsions at intervals of about four or five hours and lasting from three to five minutes. The patient's temperature rapidly arose to 108° (R), the pulse was greatly accelerated until imperceptible, and she expired about fifteen hours after entering the hospital.

REPORT 2. A twenty-three-year-old white male entered the hospital with abdominal complaints of one day's duration. A diagnosis of acute appendicitis was made and surgery advised.

During the maintenance of anesthesia (ethylene and ether), while the purse-string suture was being put in, the patient developed a convulsion which started in the face and rapidly generalized. It was first clonic and then became tonic, lasting about three minutes. Cyanosis was marked. The anesthetic was stopped and oxygen and carbon dioxide were administered. The convulsion ceased and the patient's color returned to normal.

Anesthesia was completed with cyclopropane. During the seizure, the patient's temperature had increased to 106° (ax.), pulse to 160, respirations to 48, and his blood pressure rose to 280 systolic, whereas at the beginning of the operation, the blood pressure dropped to 86 (systolic.) The pulse was 148 and of fair quality and respirations were 24/min.

Postoperatively, he was given antistreptococcal sera and intravenous glucose solution. He made a favorable recovery with no repetition of the convulsions.

REPORT 3. The patient was an acutely ill nine-year-old female in whom the diagnosis of acute appendicitis was made and an immediate operation was arranged for.

The anesthetic used was ethylene and ether. On exploration, an acute gangrenous appendix was found and in the course of its removal, the patient became cyanotic and had a severe convulsion which lasted for about ten minutes. The convulsions ceased and the surgery was completed.

Postoperatively, the pulse became very rapid (196/min.) and thready, and the temperature arose to 106° (ax.) The respirations became shallow and cyanosis reappeared. Intravenous glucose solutions and stimulants were administered, but the patient expired about four hours after entrance to the hospital from what appeared to be an overwhelming toxemia.

REPORT 4. This thirteen-year-old white male was sick for about thirty-six hours before entering the hospital with an abdominal complaint consisting of nausea, vomiting and abdominal pains. He had a generalized abdominal tenderness which was most marked at McBurney's point. The temperature was 99.4° and the white blood count 22,500. A diagnosis of acute appendicitis was made and surgery advised.

Under ethylene and ether anesthesia the abdomen was opened and an acute gangrenous appendix, with a rupture at its base, was found and removed. Toward

the conclusion of the operation there occurred a convulsion consisting of a twitching of the facial muscles and clonic movements of the upper extremities. The anesthetic was discontinued and oxygen given, causing the seizure to abate after about three minutes duration. The operation was completed under light anesthesia with no further convulsions. The patient subsequently had a satisfactory postoperative recovery.

CLINICAL OBSERVATIONS OF TWO THOUSAND PEPTIC ULCER CASES

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In the last twenty years a great deal of discussion has arisen over the treatment of peptic ulcer. We wish to present some observations that have been made during that time in the study of two thousand peptic ulcer cases.

A survey of the extensive literature on the subject reveals a marked difference of opinion as to the cause and treatment of this chronic disease, yet these same investigators seem to record similar end results irrespective of the treatment employed. These results are not satisfactory. Many physicians feel that it is not worth the effort to carry out a detailed management because the majority of patients will have a recurrence of symptoms within a few years. However, the problem of peptic ulcer is before us and the distress from ulcer and its complications is one of the most common causes for which young people seek medical advice.

In presenting these observations, we hope that our experience may be of help to the physicians who do not have access to teaching hospitals and to those who are able to hospitalize only a few of their medical patients. A great many of us who live in small communities do not have the advantages of the equipment in large laboratories. We cannot do frequent carbon dioxide and chloride estimations of the blood to determine alkalosis. We are forced, through economic conditions, to treat most of our ulcer cases by some ambulatory management and must depend upon a good clinical follow-up in the handling of these cases.

The data accumulated in this study have been compiled from patients who have been treated by the diet-alkali management originated and

perfected by the late Bertram W. Sippy.¹ A modification of this management has been used and a large majority of the cases treated by an ambulatory method. We have adhered strictly to the dietary regime and principles of alkaline therapy.

ETIOLOGY

A discussion of treatment cannot be undertaken without considering those factors which cause the lesion and prevent it from healing.

Ochsner² and his co-workers concluded that the treatment of peptic ulceration is unsatisfactory because in too many instances attention has been focused on the ulcer itself without realizing that the ulcer is merely a symptom of a generalized disorder. They conclude that unless the underlying factors which are responsible for the predominating symptoms, in each instance, are corrected the results of therapy will be unsuccessful. These same investigators have discussed the uncontrollable factors and the controllable factors in the cause of ulcer. In the first group, the uncontrollable factors are: (1) tissue susceptibility; (2) constitutional predisposition. In the second group, the controllable or precipitating factors are: (1) hyperacidity; (2) hypersecretion; (3) focal infection, and (4) gastric trauma. All these factors have been observed and discussed by many investigators. It is significant that in this series a hereditary tendency was observed. There seemed to be an unknown factor in these cases which can only be explained by a constitutional predisposition. Individuals who do not have ulcers may have any one or all of the precipitating factors, but if this unknown predisposing factor is not present an ulcer will not develop.

Mann,³ in his experiments on animals, has shown conclusively that ulcer occurs in the mucosa subjected to the action of acid gastric contents and unprotected by the neutralizing mechanism. Similar results were obtained by DeBakey⁴ when he proved that of all the constituents of alkaline duodenal juices, bile is the most effective in preventing the formation of jejunal ulcers. Pancreatic juice is the next most protective and duodenal secretion the least. A few years ago, Palmer⁵ reported a study of his cases and concluded that ulcer does not develop in the stomach without the presence of acid. Rosenow⁶ demonstrated that focal infection plays

From the Division of Medicine, The Pelton Clinic. Read before the Section on Gastro-Enterology and Proctology, American Medical Association, San Francisco, June, 1938.

an important role in the etiology of ulcer. The above factors undoubtedly have an influence on the causation and chronicity of ulcer; however, the observations in this study corroborate the work of Rivers⁷ in that the most outstanding single factor that causes recurrence of ulcer symptoms and prevents an ulcer from healing is the neurogenic one.

It has been observed repeatedly that patients will go along on ambulatory management symptom-free for months or even years until they develop some nervous upset, emotional strain or a period of tension, then they experience a recurrence. The question repeatedly arises in our minds: Why does one individual develop an ulcer and another does not? Both have the acid, infection, trauma and neurogenic factors. This question must remain unanswered until we determine that unknown fundamental predisposing factor in ulcer patients. A few years ago, in a personal communication, a noted physiologist made this statement: "I have spent years experimenting on animals to determine the cause of peptic ulcer; I am going to quit because I cannot reproduce the nervous system of man in the dog."

DIAGNOSIS

It is not difficult to make a diagnosis of peptic ulcer. A good detailed history is most important. The patient will describe his distress as heart burn or as burning, gnawing, bloating, boring, stabbing and aching. Irrespective of how the distress is described, all patients characterize their symptoms in the same manner. The distress will appear at periodic intervals lasting from a few days to a few weeks. There may be months of freedom between attacks. Each period of distress will be characterized by five points, originally described by Sippy¹: (1) the distress will come on from one to three hours after meals; (2) it will never be present in the morning before breakfast unless there is a retention over night from obstruction; (3) adequate alkali will always relieve the distress; (4) food taking gives relief, and (5) emptying the stomach either by vomiting or aspiration relieves when no complication is present.

If the patient has not recognized these details, their presence can be determined by instructing the patient to keep an accurate diary for five days, noting the exact time the distress comes

on after meals. After the distress appears, test with adequate food and at another time, with an adequate alkali. We consider calcium carbonate, grains 30, and calcined magnesia, grains 30, sufficient to alkalinize any stomach content. At another time, remove the stomach contents by aspiration. Record the findings from these tests in the diary. The results of this test-out period will give reliable data that can be used in the diagnosis of peptic ulcer.

After arriving at a clinical diagnosis, a roentgenological study is made as confirmatory evidence and for the purpose of locating the lesion as gastric or duodenal. It is not our purpose to minimize the value of these roentgenological studies, but many physicians do not have an expert roentgenologist available and must depend on their clinical findings. The majority of peptic ulcers can be accurately diagnosed without the use of the roentgen ray. Fluoroscopy is of more value than films. Many times the films fail to show the ulcer defect in the duodenum because of spasticity, while with a careful fluoroscopic examination the crater will fill and the defective cap will be readily visualized.

In the diagnosis of ulcer, an Ewald test breakfast is clinically as valuable as the fractional meal. If no free acid, a milk coagulation test will determine enzyme activity. Stool examinations for occult blood are done routinely. A careful physical examination together with other routine laboratory studies are imperative. All of these procedures can be carried out in the office of any practicing physician.

TREATMENT

Any thorough plan of treatment must be based upon sound physiological principles. There are two fundamental reasons why any management may fail to give permanent results, (1) the cause of ulcer is not known; (2) the nervous mechanism and individual susceptibility cannot be controlled.

A discussion of ulcer treatment cannot be undertaken without considering separately the problems of gastric and duodenal ulcer. The problem of gastric ulcer has been of great interest in the past because many investigators consider this lesion potentially malignant. Evidence is lacking that peptic ulcer changes into a malignancy. Many believe that the course of an ulcer continues as such and that a cancer starts as a

neoplasm. Because of this difference of opinion, some favor a radical resection of all gastric ulcers; others favor medical management.

In this series only eight per cent. had gastric ulcer. A clinical trial period of management for a few weeks was followed in order to differentiate gastric ulcer from carcinoma. The results over a period of years have been so favorable that it is not deemed necessary to resort to surgery and to the pathologist in order to make the differential diagnosis.

If at the end of one month of accurate management the ulcer defect has disappeared or is diminished in size, the subjective symptoms relieved, and the benzidine test shows an absence of occult blood, the patient is advised to continue medical management under very close observation. However, if any one or all three of the criteria consistently fails to respond, surgical interference is advised. Jordan⁸ and others have used this plan of differentiation between gastric ulcer and carcinoma for years and report favorable results. Not all physicians have access to well-trained surgeons capable of doing stomach resections; therefore, if this clinical trial period is followed accurately and honestly, these patients will not be subjected to the high mortality of a gastric resection for simple gastric ulcer.

In this series, several patients continued to show occult blood in the stool, at the end of a month's accurate management, but refused to have surgery. These were carried along under strict observation and within a short time the blood disappeared from the stool. One patient showed blood in the stool for three months. The diagnosis was carcinoma, but he refused to be operated on and ten years later we found him in excellent health.

The treatment of duodenal ulcer is more difficult than that of gastric ulcer. The danger of malignancy is not present but there are other complications, such as spastic or scar tissue obstructions and continued night secretion, that make these cases more difficult to manage.

In any successful management of duodenal ulcer there are three factors that must be considered: (1) the free acid must be neutralized; (2) the stomach must empty its contents in normal time, and (3) an attempt must be made to stabilize the vegetative nervous system. The unsatisfactory results are caused, in most instances, by failure to recognize one or all of the

above factors. In carrying out ambulatory management attention to details is very important. Each patient is put on a liquid-soft feeding for a period of two or three weeks, which consists of thin cereals, soft eggs, milk or cream soups, broth, custards, soft puddings, rice, hearts of toast, butter, milk and cream. The food is taken in three or four small meals daily, depending upon the economic status of the patient. Most of these cases are allowed to continue their work. After two or three weeks, the diet is changed to three small meals a day consisting of the soft foods with the addition of pureed vegetables, simple fruits, as orange juice, apple sauce, pear sauce and peaches. Scraped beef is added and other foods allowed as the management progresses. The one important factor in the diet is to keep the meals small and the food in an easily digestible form. Powders are given every two hours during the day, beginning one hour after each meal, until 7 P. M., and in the evening at 7:30, 8, 8:30 and 9. A No. 1 powder containing calcium carbonate, grains 30; and a No. 2 powder containing calcium carbonate, grains 10, and calcined magnesia, grains 10, are used. These powders are alternated and the frequency with which No. 2 powder is given depends upon the laxative effect desired. Milk and cream, each one and one-half ounces, is given every two hours beginning one hour after the first powder. This management provides the stomach with food or alkali every hour from breakfast until 9 P. M. Belladonna is used in the majority of cases. Frequent aspirations prove that the first important factor in medical management, the control of free hydrochloric acid, has been accomplished.

Pyloric obstruction is the most common complication which prevents a duodenal ulcer from healing. Failure to recognize this complication results in failure of the medical management. The majority of obstructions are due to spasm and inflammatory swelling and will open up in a few weeks if the stomach is emptied at bed time. The patient may be taught to aspirate at home. As soon as the aspirations show no retention, they are discontinued. At the end of a few weeks, if from four to ten ounces are aspirated each night, it is assumed that the obstruction is due to scar tissue and surgery is advised. Many obstructive cases have night pain between midnight and 3 A. M. This is due to

a continued secretion of acid gastric juice and can be controlled by an additional aspiration at midnight. By these methods, the normal emptying time of the stomach or the second important factor of a successful medical treatment is fulfilled.

Criticism of the alkali management is based on the theory that these patients develop a disturbance of the acid-base equilibrium. For this reason, sodium bicarbonate as a neutralizing agent is not satisfactory. Calcium carbonate is used in most cases and the number of patients experiencing symptoms of alkalosis has markedly decreased. We are not unmindful of the fact that susceptible individuals may tolerate alkali poorly. These symptoms are readily controlled by discontinuing powders every four to six weeks for a five day period. The diet and milk and cream are continued as usual. Alkalosis will be very rare if these details are followed. Such cases do well and the free acidity is controlled when tribasic calcium phosphate and magnesium are used.

This management, as outlined, is continued in detail for nine months to one year, depending upon the individual case. During the succeeding twelve months certain articles of diet are to be avoided and the number of powders gradually diminished. An educational program is carried out with each patient as to the type of existence best suited to his case and must be followed if we are to reduce the number of recurrences. Each case is a separate problem and must not be considered as merely a part of a group. These individuals are instructed to live a life as free as possible from tension and worry, not only for one year but for the remainder of their lives, realizing that during periods of nervous strain, ulcers recur.

Fogelson⁹ reports good medical results with mucin. Of the parenteral methods, the larostidin treatment which consists of injection of histidine daily for twenty-one doses, is the most popular at the present time. Synodal, a preparation containing emetine hydrochloride, is also used for treatment of ulcer by injection. Sandweiss¹⁰ proved by clinical experiments that he obtained the same end-results whether he used larostidin, synodal, dead bacteria in vaccine or distilled water as an injection in the treatment of duodenal ulcer. They all gave fairly good immedi-

ate results but all had 85 per cent. recurrences within six months. Eusterman¹¹ and Rivers¹² state that the results from parenteral methods and mucin have been disappointing. The aluminum hydroxide treatment deserves consideration. Woldman and Rowland¹³ believe that a continuous 24-hour adsorption of gastric acid by aluminum hydroxide is useful in treating acute peptic ulcer. If the continuous drip is not used, many investigators doubt that the acidity is sufficiently controlled or the pylorus sufficiently relaxed. This method is impractical for the majority of patients.

Brown,¹⁴ Jordan,¹⁵ Eusterman¹⁶ and Rivers⁷ are strong advocates of the alkali management. Brown¹⁷ obtained good results in 66 per cent. of the cases studied. Jordan¹⁵ found that nearly one-half of duodenal ulcers treated medically have one or more recurrences within a period of five years after treatment. These results are based on strict alkali management, similar to that advocated by Sippy.

In this series of two thousand cases over an average period of five years, we obtained 60 per cent. good results. The important question is: How can we prevent recurrences? The ulcer problem must be considered as a life problem and not as a disease of a few weeks' duration. As is so frequently stated, "you must spend one year healing the ulcer and the rest of your life keeping it healed." Until we know the predisposing factor or factors causing ulcer, we must depend upon a rigid educational program for our ulcer patients to prevent recurrences. The results of ambulatory alkali management are essentially the same as those of strict alkali management. We must conclude that the solution of the ulcer problem is far from satisfactory.

CONCLUSIONS

An ambulatory diet-alkali management has been presented for the treatment of peptic ulcer.

This management can be carried out by physicians who do not have access to investigative laboratories and teaching hospitals.

The etiology of peptic ulcer is unknown. In this study a familial tendency was observed.

A "test-out" is suggested to aid in the diagnosis of peptic ulcer. This is accomplished by the aid of a clinical diary.

A trial period for the differential diagnosis of gastric ulcer and carcinoma is essential.

Three factors that must be recognized in any successful management of duodenal ulcer are discussed.

Disturbance of the acid-base equilibrium will rarely occur if the details of this management are followed.

The recurrences depend upon the completeness of the original cure and the more difficult problem of individual susceptibility.

The result of ambulatory medical management in two thousand cases over an average period of five years showed 60 per cent. good results. This is essentially the same as the strict medical management.

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PRONTOSIL IN PYOPNEUMOTHORAX

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Fluid appearing in the pleural cavity during the conduction of a pneumothorax is of common occurrence and usually of little moment. Infrequently, however, there arises a type of pleural infection accompanied by purulent fluid, which takes on an alarming and serious character, causing an intense toxemia, long-drawn out, and often having a fatal termination. Fluid of this nature in the pneumothorax cavity, a pyopneumothorax, has many more elements of danger than the commonly-understood empyema, due perhaps to the large pleural surface exposed, with the great difficulty present for the walling-off of the fluid, and for the reason it occurs in a tuberculous person.

Two patients with pleural infection of this toxic type recently presented themselves for treatment; in both of which the fluid was ushered in in the classical manner, with chills, a temperature of 103 to 104, severe pain in the affected side, dyspnea and vomiting; the change from a comfortable, afebrile patient to a very sick one being very abrupt. The customary aspiration at once resorted to brought the usual slight and transient relief. Sterilization of the infected pleura by instillation of the many dyes and antiseptics that have been brought to notice, including oleothorax, had by experience not only proved disappointing, but had often appeared to be the introduction of another foreign body in an already injured pleural cavity. The shortcomings of these preparations being evidenced by the growing advocacy of thoracoplasty as the end resort, and this before the formation of chest-wall fistulas, the development of amyloid disease, or the wasting of the patient. Woodruff, 1938,¹ in a review of 154 cases of tuberculous empyema, 121 of which developed during the course of induced pneumothorax, gives the following figures for that group which had a secondary (mixed) infection. When aspiration alone was used; none well and working, 83.3% dead. With saline irrigation and the instillation of various dyes, 15% well and working, 58% dead. When oleothorax was employed, 23% well and working, 46% dead. And where thoracoplasty

¹Read before the St. Louis Medical Society, St. Louis, September 27, 1938.

was finally performed, 41.7% well and working, 33.3% dead.

From these figures it can be seen that the methods of managing such cases had not attained all to be desired; leaving the problem still before us of bringing about sterilization of the infected pleural cavity, of preventing the complications mentioned, of avoiding the necessity of thoracoplasty, and the while maintaining the pneumothorax. Dettol, a saponified xylenol derivative, was first employed, by instillation into the pleural cavity after aspiration; Gilmour, 1937,² having reported benefit from its use in a case of toxic, purulent fluid developing during the course of pneumothorax treatment, in which, however, open tube drainage was carried out at the same time. In our cases the dettol had a gelatinizing effect on the fluid, making its withdrawal on the fifth and seventh instillation almost impossible, so the use of the preparation was abandoned.

Treatment with prontosil and sulphanilamide was next considered; a number of medical writers having reported good effects from their use in empyema, though no reference could be found to the use of this chemical group in pyopneumothorax. Tixier and Eck, 1935,³ give an account of the recovery of three children with purulent pleural effusion, containing hemolytic streptococci, by the oral use of sulphanilamide without the necessity of surgical assistance. Douthwaite, 1935,⁴ mentions a case of bronchopneumonia accompanied by a turbid pleural effusion containing streptococci, in which treatment with prontosil intramuscularly and sulphanilamide orally was followed by disappearance of temperature and absorption of fluid. Brown, 1937,⁵ reports two cases of postinfluenzal, streptococcal empyema treated with sulphanilamide orally and prontosil intrapleurally with recovery and disappearance of fluid roentgenologically. This was the only reference found to the instillation of the dye into the closed pleural cavity. Gay and Clark, 1937,⁶ state, "Sulphanilamide prevents the evolution of an invariably fatal streptococcus empyema in rabbits when it is given repeatedly and in sufficient doses subcutaneously." Ballou and Goldbloom, 1937,⁷ report a case of empyema accompanied by numerous complications and relapses in which a rib resection had been resorted to. After sulphanilamide was given orally, and prontosil

intramuscularly and into the thoracotomy opening, the temperature became normal, the pleural discharge less, and the empyema cavity smaller. It was thereupon determined to use the dye in our cases; by instillation into the infected pneumothorax cavity as well as by intramuscular injection. The effects that followed were so direct and singular as to prompt this report.

Case 1. Female, aged 36 years. History: pulmonary tuberculosis of three years' duration. The radiograph showed unilateral involvement; the upper-third of the right lung appearing consolidated, and exhibiting numerous small, honeycomb cavities. Tubercle bacilli were present in the sputum. Physical examination was otherwise negative. Pneumothorax was induced, with an obtainable collapse of 80%; a cord-like adhesion being present at the level of the second rib. There followed entire disappearance of temperature, cough and expectoration. Three months after the institution of pneumothorax a temperature of 100 was noted, and fluoroscopic examination showed the presence of a few ounces of fluid in the pneumothorax cavity. Three days later a chill occurred, accompanied by a temperature of 104, severe pain in the collapsed side, dyspnea and vomiting. The fluid had now increased in volume, and aspiration produced a clear, thin, yellowish liquid which a few days later was changed to a thick, odorless pus. This fluid on direct smear showed many pus cells, but no tubercle bacilli or other bacteria, and culture showed no growth on blood agar after 48 hours incubation. Simple drawing out of the fluid giving no material relief, dettol was instilled into the pleural cavity after the succeeding aspirations, but at the end of seven such procedures was abandoned because the fluid was becoming too gelatinous to withdraw, and the condition of the patient had not substantially improved. Prontosil was now employed in the effort to sterilize the pleural cavity; by instillation, after as much of the fluid as could be was withdrawn. It was also given intramuscularly. Improvement was obvious from the first instillation and was consistently maintained as the treatment was continued. The temperature dropped decisively, the fluid became thinner and slower in reforming, and the general condition of the patient was noticeably better. After six instillations all fluid had disappeared from the pleural cavity so the use of the dye was discontinued. Complete absence of fluid was first noted, by fluoroscope, 86 days after its onset, or 50 days after beginning the use of prontosil. The total temperature duration was 58 days, 22 of which were during the administration of prontosil. The entire amount of fluid aspirated was 126 ounces (3725 cc.), in twelve operations, during a period of 48 days. Present status of patient, four months after disappearance of the pleural fluid: Radiographic examination demonstrates an entire absence of fluid in the pleural cavity, but shows adhesion of lung, at its base, to the chest wall; reducing the pneumothorax to approximately 25% of complete. The diseased portion of the lung is fairly well compressed and the contralateral lung shows no change. There is a complete

absence of temperature, cough and expectoration. Weight and strength are restored in their former state, enabling the patient to perform her housework as was formerly done. The pneumothorax is being continued.

Case 2. Female, age 26 years. History: pulmonary tuberculosis of five years' duration. Radiographic examination showed unilateral involvement; heavy infiltration and consolidation throughout the upper-quarter of the left lung. Tubercle bacilli were present in the sputum. Physical examination was otherwise negative. Pneumothorax was induced, obtaining an extreme collapse of 70%; a broad adhesion occupying the apex, and a cord-like adhesion attached to the diaphragm. Temperature, cough and expectoration disappeared entirely. Six months after the institution of pneumothorax, on periodical fluoroscopic examination, a small amount of fluid was seen in the pleural cavity. Next day there developed a temperature of 100.8, severe pain in the collapsed side, dyspnea and vomiting; followed three days later by elevation of the temperature to 102.4, and an increase in volume of the fluid. Aspiration produced a clear, fairly-thin, brownish fluid, which a few days later had changed to a thick, odorless pus. On direct smear this fluid showed no tubercle bacilli or other bacteria, and no growth on blood agar. The experience in this patient with aspiration and with dettol was practically the same as in Case 1, so prontosil was employed in a like manner. The improvement that followed was similar; a prompt response to the dye, with permanent disappearance of the fluid after the sixth instillation. Complete absence of fluid was first noted 98 days after its appearance, or 57 days after the first prontosil instillation. The total amount of fluid aspirated was 185 ounces (5469 cc.), in 17 operations, over a period of 48 days. The total duration of temperature was 74 days, of which 35 were present during the course of prontosil treatment. Present status of patient, three months after disappearance of the pleural fluid: On radiographic examination no fluid is seen in the pneumothorax cavity, the apical adhesion appears the same, but there is now extensive adhesion of the lung at its base, reducing the pneumothorax to approximately 30% complete. The upper-third of the lung is partially compressed, and the contralateral lung remains negative. Cough and expectoration are absent, and the temperature is normal except for a few days preceding menstruation. Strength and weight are restored and the patient is up and about, taking only the two-hour, mid-day rest. The pneumothorax is being continued.

SUMMARY

The prontosil was employed by instillation into the pleural cavity, in 5 to 10 cc. quantities, following aspiration; the latter being performed as called for by reaccumulation of the fluid, at intervals of three to seven days. In addition the drug was injected intramuscularly, 5 cc. every one to three days. When neo-

prontosil was used, one-half of these quantities were given. Sulphanilamide, used orally for a short time, was without obvious effect. Irrigation of the pleural cavity was neither desired nor attempted. Instillations were kept up throughout the period of the presence of fluid; the intramuscular injections for some days after. Of the two routes the intrapleural appeared the more effective. Close following the first instillations of prontosil a comparatively prolonged reduction in temperature was noted, which with repeated aspiration and instillation resulted gradually in a return to the normal; general improvement invariably accompanied that of temperature. The fluid upon the addition of prontosil, became thinner, less purulent in character, and slower in reaccumulation, to its final disappearance. At no time was there any sign of irritation or infection of the needle-track in the chest wall; nor was there evidence of a bronchopleural fistula. Reactions: The urine changed in color to a pronounced red after administration of the dye by either route, but there was no evidence of kidney damage. Toxic reactions in the blood, skin or gastrointestinal tract were not seen. Adhesions: Adhesion of the pleural layers, with its proportionate loss of the pneumothorax, was not prevented, but it seemed not so widespread as had been heretofore witnessed following fluids of this type. Those that did occur may have been furthered by the dettol, through its gelatinizing effect upon the fluid; an effect also produced in vitro. In the attempt to prevent such adhesion, as high an intrapleural pressure was maintained throughout as was comfortable to the patient.

CONCLUSIONS

In the realization of the seriousness of a pyopneumothorax from this type of infection, with its violent onset and prolonged toxemia, the complications that ensue, and the commonly fatal ending; and in the knowledge of the discouraging results that have followed conservative treatment heretofore, a drug which will bring about the change prontosil did in these respective patients is admittedly worthy of attention. True, there were but two cases, in both, however the dye cleared the toxemia and stopped the reforming of the fluid, thereby preventing complications, avoiding open drainage of the pleural cavity, and, for the present at least,

obviating the necessity of thoracoplasty. It may be certain that the dye will not do the same in every case of pleural infection. Individuals and infections vary greatly, and complicating diseases, known and unknown, may be present, however, prontosil does put into the hand a valuable addition to our weapons against infection. From the standpoint of the patients, both are apparently in as good a condition as they were before the pleural infection occurred, with the exception of a considerable reduction in the volume of their pneumothorax. Perhaps with earlier use of the dye, and more assiduous attention, pleural adhesion with its proportionate loss of the pneumothorax may be better avoided.

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ACUTE INTESTINAL OBSTRUCTION FROM BILIARY CALCULI

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A male, 65 years of age, entered St. Luke's Hospital, Sept. 15, 1930, complaining of cramp-like pain in the abdomen of 60 hours' duration. The pain had begun suddenly in the right lower quadrant with an urge to go to stool. The bowels moved normally two hours later, with some relief of the distress. The pain came in paroxysms and lasted several minutes. After eight hours, he began vomiting at frequent intervals of two hours. The vomitus, early, was stomach contents; later, it was fecal in character. The bowels moved but once, at the outset of the attack.

The past history revealed an attack four months previously of painless jaundice. The patient continued his duties as a streetcar motor-man without interruption. The jaundice was low grade in character, afebrile, and disappeared in eight or nine days. His physician had diagnosed a catarrhal jaundice.

Physical examination revealed a well-developed, obese elderly male, markedly dehydrated, and quite ill. The temperature was 101.8° F., rectally; pulse 118; respirations 22. The erythrocytes numbered 4,910,000 per cu. mm. of blood; the leucocytes numbered 15,800 per cu. mm. of blood. The hemoglobin determination revealed 15.3 grams. per 100 cc. of blood. The differential blood count was normal. The blood pressure was 158 mm. of mercury systolic and 80 mm. of mercury diastolic. The urine contained less than 5 mgm. of albumen per 100 cc. The microscopic examination of the urine was negative. The chemical constituents of the blood were: urea 18 mgm. per 100 cc.; chlorides 612 mgm. per 100 cc.; and alkali reserve 58 volumes per 100 cc. of blood. The abdomen was distended moderately with a tympanitic note to percussion. There were no areas of maximal tenderness and no masses could be palpated. Rectal examination was negative and no stool was present on the examining finger.

Under ethylene anesthesia a right paramedian incision was made. Presenting in the wound were dilated loops of ileum. The bowel was examined between the fingers. On approaching the ileocecal junction a firm mass was encountered. It could be moved about within the lumen and did not appear fixed at any point. Distal to it the bowel was collapsed. Although the blood supply to the bowel was obstructed partially, the color was deep maroon. On examination of the bowel below this mass, a second one was found about six inches below the first and only three or four inches proximal to the ileocecal valve. The lower mass, likewise, was moved easily within the lumen. The bowel between the two growths seemed grossly normal. At a point midway within the bowel a transverse incision was made. By gentle manipulation each mass was easily delivered. The bowel then was closed with two layers of black silk. The postoperative course was smooth and the patient was discharged 14 days after the operation.

Chemical analysis revealed the masses to be cholesterol stones. These proximal stones measured 3 cm. in length and 3 cm. by 3 in diameter. The distal stone measured 2.2 cm. in length and 3.5 cm. by 2.8 in diameter.

Cholecystographic studies three weeks post-operatively revealed a non-functioning gall-bladder. Roentgenologic examination of the stomach and duodenum was negative.

DISCUSSION

A ruptured gall-bladder is thought of usually as presenting a rather stormy picture. Yet a slow perforation and resultant spontaneous anastomosis with some part of the gastrointestinal tract apparently can occur unobtrusively. This case exemplifies this thesis. The only episode relevant to his condition prior to the bowel obstruction occurred about six months earlier when the writer examined him. He was slightly jaundiced, had slight fever, and remained in bed three or four days. No tenderness could be elicited in the region of his gall-bladder. His convalescence, particularly his gain in strength, had been somewhat slow, in his opinion. At no time did he complain of distress in the abdomen or of dyspepsia until the onset of his bowel obstruction six months later.

Spontaneous cholecystoduodenostomy, cholecystgastrostomy, and cholecystocolostomy occur not infrequently and in about the order mentioned. This was probably a cholecystoduodenostomy or jejunosomy. The most frequent cause of bowel obstructions probably is adhesions resulting from the inflammatory process. The upper part of the bowel tract, therefore, is usually involved.

The ordinary gallstone is small enough to pass through the digestive tract without notice. If it is large, the most common site of lodgment is at the ligament of Treitz. After passing this point, the next point of obstruction is apt to be the ileocecal valve, which was the site in this patient, where it apparently acted somewhat as a ball valve mechanism for 24 hours, and then became complete.

The procedure of removal of foreign bodies producing bowel obstruction is worthy of comment. It is much better to push the bodies upward and to open the bowel well above the point of obstruction. Closure is easier and the lymphatics of the bowel wall are not so highly

impregnated with bacteria as at the point of obstruction.

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CHRONIC ULCERATIVE COLITIS

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HISTORICAL CONSIDERATIONS

This disease has become well known only during the present generation. It was mentioned by Wilks and Moxon in 1875. Hawkins stated that he felt that the "pedigree of the disease can be traced to the bloody flux of Sydenham in 1669." In England bacillary dysentery has been endemic since the 14th century. Eyre (1904) was the first to prove that asylum epidemics were caused by dysentery bacilli. In 1912 Nabarro found that the summer diarrheas in children were in many cases caused by the same germ.

ETIOLOGY

The disease is essentially one of early adult life, the majority of cases occurring between 20 and 40. A few years ago Helmholtz reported five cases in children and stated that he was unable to find in the literature "a single article dealing with chronic ulcerative colitis." The sexes are equally involved. Bacteriologically the last word is not yet spoken. In 1924 Barga described his diplo-streptococcus. According to the rules of Koch he was able to prove the specificity of this germ. However, doubts have been expressed by a number of observers. In particular, A. F. Hurst is definite in his assertion that this is not the cause of the disease. From 14 cases of ulcerative colitis, Paulson isolated ten types of streptococci, but only two were of the Barga variety. Seven of the ten (including Barga) were injected intravenously into rabbits. Five (including Barga) produced lesions in the colon. Three of the strains caused ulcers in 45 per cent. of the experiments, whereas the Barga type gave results in only 16 per cent.

Since streptococci thrive in mucus, blood and pus the question has been raised as to whether they may be growing accidentally and not etiologically. F. Gallart Mones and Sanjuan P. Domingo isolated the Barga organism in 30 per cent. of the cases of ulcerative colitis studied and in 25 per cent. of normal controls. In rabbits

these observers did not find any more intestinal lesions with the Bergen type than with any of the five other strains, nor did they find the filtrates of the Bergen variety any more toxic. As early as 1906 (Saundby) and 1907 (Hawkins) the belief was expressed that this disease is a form of or a sequel to, bacillary dysentery. In a personal communication shortly before his death, R. H. Jaffe made the same statement. Another well-known pathologist feels that the bowel condition is not primarily of bacterial origin, but that the process is due to some toxemia and he likens it to changes in the intestine incidental to mercurial poisoning. Not infrequently one finds marked depletion of the body as evidenced by the chemical blood studies, showing very low figures for calcium, phosphorus and cevitic acid. Obviously it is not possible to determine whether this is cause or effect. W. Z. Fradkin believes that in ulcerative colitis, it should be considered to be either amebic or bacillary until proved otherwise. According to this observer in the Sonne strain 1:40 should be considered diagnostic. In the His, Flexner and Mt. Desert strain the titer should be 1:160. G. M. Dack, L. R. Dragstedt and T. E. Heinz have isolated the *Bact. necrophorum*.

CLINICAL PICTURE

The onset is often acute with severe diarrhea and fever, which is sometimes followed by a quiescent period. At times the beginning is subacute and insidious, the first symptom being the passage of blood and mucus with or without diarrhea. It is not uncommon for a patient to undergo an unnecessary operation for hemorrhoids. The proctoscope should eliminate this error. Diarrhea is almost always a prominent feature. However, the writer has seen at least one patient, who, in spite of marked ulceration, was constipated and was compelled to resort to lubrication with mineral oil. The number of evacuations varies greatly. There may be only two or three, or more than twenty in 24 hours. The stools are not tarry as the condition is confined to the colon. Fresh blood, mucus and pus are in evidence. Actual pain is rare except perhaps at times immediately after a bowel movement, and tenesmus does not occur unless there is involvement of the anal canal, or in cases in which ischiorectal abscess occurs as a complication. In the uncomplicated case the abdomen is not dis-

tended. Tenderness is not a part of the picture, and when it does present itself along with distention, it allows the conclusion that the process has extended to the peritoneum. Emaciation may be extreme and half of the body weight, or more, may be lost. Fever is a variable finding. It may be negligible or may run as high as 102 or 103.

COMPLICATIONS

The literature gives the impression that complications are very common.

	1500 cases Mayo Clinic		40 cases New Lodge Clinic	
	No.	Pct.	No.	Pct.
Polyposis	130	8.7	5	12.5
Stricture	110	7.3	5	12.5
Arthritis	60	4.0	1	2.5
Perirectal abscess.....	50	3.3	5	12.5
Skin lesions	42	2.8	1	2.5
Malignant disease.....	31	2.1	0	0.0
Perforation of bowel.....	30	2.0	0	0.0
Renal insufficiency.....	15	1.0	1	2.5
Endocarditis	15	1.0	0	0.0
Massive rectal hemorrhage (exsanguinating)	15	1.0		
Phlebitis	15	1.0	1	2.5
Splenomegaly	14	0.9	0	0.0
Ocular disease.....	10	0.7	1	2.5
Nutritional edema.....	10	0.7	0	0.0
Peripheral neuritis	5	0.3	0	0.0
Progressive arterial occlusion...	3	0.2	0	0.0
Multiple liver abscess.....	2	0.4	0	0.0
Tetany	1	0.07	0	0.0

DIAGNOSIS

Endoscopy usually gives positive evidence of ulceration. However, at times the denuded areas may not be low enough to be within range of the sigmoidoscope. When ulcers are present the experienced proctologist is usually able to recognize the type. Amebic ulcers present raised margins, etc. One of less experience will meet some difficulty in attempting to differentiate. This, however, is not of great importance as the laboratory is the court of last resort. Without regard to ocular or laboratory evidence, amebiasis, because of its curability, should always be considered as a possibility. X-ray films are quite characteristic as there is an absence of haustration and the organ appears as a pipe. Carcinoma is always to be considered, although the age incidence is higher than in colitis. This disease can usually be determined by endoscopy, x-ray or more simply by palpation. Hemorrhagic proctitis is mentioned as a confusing factor, but unless there is some known trauma to cause the local inflammation, it must be very difficult to assert that there is not an ulcerative lesion.

TREATMENT

Rest in bed is one of the most important elements in the cure. The patient should remain there as long as there is fever or until the evacuations drop to two or three in 24 hours. Obviously the diet is of some importance but it seems that the textbooks have advocated too strongly marked restrictions in the intake. As in any other condition accompanied by an irritable bowel there should be no actually cold foods, unless they are taken slowly so as to be warmed in the mouth. For a number of years the writer has felt that the diet should be fairly liberal, omitting only such items as have seeds or skins or a large amount of cellulose. Probably at this time a liberal diet is not so important as it was before the days of mineral tablets and concentrated vitamins. As far as possible the diet should be adjusted to the likes and dislikes of an individual whose appetite is already greatly impaired. It has been gratifying to learn that A. F. Hurst holds the same view regarding the advisability of more liberal diets. Some years ago a patient was seen with a physician, who was insisting on extreme restrictions in the solid and fluid intake in a young man who was having more than 20 copious evacuations daily. Bed rest may be called a passive form of treatment and is of great value. The writer has never been convinced that any one of the active forms of therapy has been proved to be of real worth. In spite of this practically all the methods advocated in the literature have been used, care having been exercised, however, to do nothing that might harm an individual already greatly depleted.

Spontaneous cures may occur and nothing should be done to interfere with the greatest of all physicians—nature.

LOCAL MEASURES

There is a good reason to doubt that these measures have real value. However, when the patient is not doing well on merely passive treatment it seems justifiable to try various forms of therapy including local. Some years ago Crohn and Rosenberg reported a series of cases all of which made excellent recoveries while instillations of neutral acriflavan were employed. A start was made with solutions of 1-4000 and the strength gradually increased up to 1-2000 or more. Hurst advises a solution of tannic acid

starting with $\frac{1}{2}$ grain per ounce, the amount of the injection being not greater in volume than can be retained for at least one-half hour. He also suggests, when the process is confined largely to the distal colon, one or two grains of bismuth subgallate to the ounce of a vehicle made by dissolving one dram of coriene in four ounces of water. Of this six or eight ounces are instilled. If difficulty is encountered in having this retained tr. opium, minims 5 to 15 may be added. Hurst also advocates the use of charcoal, a tablespoonful two or three times a day. The writer has had no experience with this. In order to combat the anemia, some form of iron is usually advisable; also calcium, phosphorus and the various vitamins. Frequently transfusion is of great help or even imperative. Codein or opium may be given to check the number of evacuations or to ease the pain which occurs in a moderate number of cases.

In recent years various combinations of kaolin and aluminum hydrate have been used per rectum. J. B. Eyerly and H. C. Breuhaus, after a cleansing enema of one pint of warm water, give a retention enema of three to five ounces of a mixture of kaolin and aluminum hydrate in the same amount of water. W. Z. Fradkin found good results in convalescent patients who persist in showing blood. His mixture is made up of two parts of kaolin, one part of mineral oil and seven parts of a gel of $2\frac{1}{2}$ per cent. aluminum hydrate. In case the diarrhea is marked he gives a preliminary enema; otherwise a small saline enema two hours before the instillation, which consists of six ounces of the mixture with four ounces of water, at first three times a week and gradually reducing the frequency to one a week. Because of the beneficial effects of cod liver oil applied to infected wounds, the same treatment has been carried over to the bowel. R. Spiegel advocates a 40 per cent. emulsion in acacia and water. Also he has used a large suppository containing 68 per cent. of this oil. Manville makes use of a spray gun through the sigmoidoscope, using plain cod liver oil.

Some years ago John A. Logan reported three cures on ten minims of Lugol's solution three times a day. The writer has had no results from this treatment, nor has he seen reports of cures from other sources. For some years kaolin has been used in doses of a tablespoon or more three

or four times a day. In only one case did this drug seem effective and its use was discontinued largely because of its tendency to cake in the rectum. It is possible that in the newer method of administration (kaolin in emulsion with aluminum hydrate) better results will be achieved.

SPECIFIC TREATMENT

Even though amebae are not found it is a good plan to start every treatment with preliminary amebicidal therapy. This is especially true in children, in whom chronic ulcerative colitis is very uncommon. Furthermore, it must be remembered that with the proctoscope it is difficult to determine the type of ulceration with a high degree of certainty. However, when amebiasis is not proved one should certainly choose a harmless drug—not an arsenical and probably not emetin, except in small dosage and then followed by a less toxic drug.

In bacillary dysentery Hurst administers multivalent serum. After preliminary desentization, he gives 20, 40, 60, 80 and 100 cc on successive days. In case the patient is being cared for at home he gives intramuscularly 10 cc daily for ten days. In regard to vaccines for the non-bacillary type he believes that they have no value and that even harm may accrue. As opposed to this we have the views of Bargen. Ever since this worker published his investigations the writer has been using vaccines but always without strong convictions regarding the efficacy. However, whenever it was possible to obtain from the bowel ulcers, typical cultures of the Bargen diplostreptococcus those patients made more rapid progress while undergoing the vaccine treatment than did those from whom a different strain was recovered. For the present and until some better treatment is discovered it seems justifiable to make use of autogenous vaccines and the writer has seen no harm in so doing.

Recently an attempt is being made to treat colitis by means of fever therapy. It has been thought that in giving vaccines, the reactions accompanied by fever are the important elements of the treatment, rather than specific effect of the material. L. K. Ferguson, F. Fetter and T. G. Schnabel have induced fever but believe that the beneficial effect is due to a systemic action rather than a bactericidal. They use a relatively low temperature and short sessions: $2\frac{1}{2}$ to 3

hours at 104 to 105 (Rectal) three times a week. The number of treatments averages 12.

SURGICAL TREATMENT

Some surgeons believe that this disease is as definitely surgical as appendicitis and are in favor of doing a multiple-stage colectomy as soon as the condition is definitely diagnosed including the ruling out of amebiasis. The mortality entailed by this major operation is probably not appreciably higher than the mortality of a non-surgical regime. However, it is seldom possible to close the preliminary ileostomy and the patient is doomed to go through life with an artificial anus. R. B. Cattell in reviewing the results of surgery at the Lahey Clinic found that in 20 per cent. of the cases some form of operation was deemed necessary. He believes that in only a few patients could relief be obtained by ileostomy or partial colectomy. He also found that seldom would it be possible to anastomose the ileum to the rectal stump, which is practically always diseased. The viewpoint regarding surgery may be modified by the following data on

PROGNOSIS

Hurst believes that the non-surgical mortality is between five and ten %, which corresponds in a general way to the experience of the writer. In his series 77.6% were well and "carrying on" and without relapse, 10.6% were not well but "keeping better and about," 2.4% were definitely ill and 9.4% dead. Other authorities publish much higher mortality figures, Hern (1931) in a summary of 50 cases 1917-26 at Guy's Hospital stated that 28% died in the hospital and an additional 12% died shortly after leaving.

Hardy and Bulmer had 31 deaths in 95 patients.

185 N. Wabash Avenue.

INSTITUTIONAL BLOOD BANKS

H. H. GOLDSTEIN, M. D.; L. OLSMAN,
M. S., M. D.; J. V. EDLIN, M. D.

CHICAGO

Much has been written in recent years about blood banks and their development. Institutions have reported upon the establishment of centers for the collection of blood from expectant moth-

From the Chicago State Hospital, Edward F. Dombrowski,
Managing Officer.

ers, willing donors, placentas, cadavers and decompensated and hypertensive patients. (1, 2, 3, 4.) to be used at some later date for transfusion purposes. Little need be said concerning the apparent efficacy of such procedures. Their widespread usage and acceptance as a desirable and reliable method of making transfusions readily available suggested that some such method might be adopted in large institutions with a static population.

Venesection for the treatment of hypertension has been used as a remedy for many years and its use probably antedates the explanation of its value as a therapeutic agent. Phlebotomy as practiced in the days of its vogue when a full and bounding pulse was considered an indication for bloodletting probably was responsible for improvement in many hypertensive patients. MacKenzie⁵ included hypertension especially when associated with right heart congestion as one of the indications for venesection. He writes, "I always bleed at the usual place, at the bend of the elbow, and abstracted from twenty to thirty ounces of blood. The immediate relief given to the patients is often striking." The procedure of bloodletting for hypertensive patients, those with decompensated hearts where right heart failure predominates, and for polycythemia has been continued for many years and is considered an excellent form of treatment.

Several questions as to the advisability of the use of blood from hypertensive patients might be raised but the literature seems to support the contention that such blood can be used safely. Boleslaw Popielski⁶ described the use of citrated blood obtained from hypertensive patients for transfusion purposes and stated that the results were satisfactory. Host³ describes the use of blood from hypertensive subjects to patients with normal blood pressure but without observing any increase in pressure in the recipient. In describing the transfusion of blood from an eclamptic patient without producing any change in the blood pressure of the recipient, he shows that the pressor substances associated with such toxemias apparently do not exert an influence on recipients. G. W. Pickering⁷ states that the blood of patients suffering from essential hypertension is similar to normal blood in its content of pressor and depressor substances. He further writes, "Therapeutic results of using hyperten-

sive donors is quite satisfactory and the procedure is one that may be commended as likely to benefit both donor and recipient." In view of such opinion, concerning relief by venesection in cases of hypertension it was felt that a group of patients might readily be selected from among the hypertensive individuals in an institution, who might benefit by removal of 100 to 400 cc of blood.

State institutions for the mentally ill have a fair percentage of hypertensive patients, many of whom form a part of the static population. It was felt that by carefully selecting a group of plethoric individuals with a blood pressure elevation that an efficient blood bank could be established in which hypertensive patients would be given a venesection when a blood transfusion was needed as an emergency procedure.

Blood banks have been formed usually through having blood removed from available sources and stored until such eventualities as required their use arose. The use of a living blood bank is uniquely possible in institutions for mental patients with resulting benefit to donor and recipient.

Because of the difficulty encountered in the obtaining of blood for transfusion purposes at the Chicago State Hospital for patients, many of whom have no relatives, it was felt that a blood bank would be of real value. A group of hypertensive patients were selected whose physical condition was such that there would be no likelihood of danger to the patient in having several hundred cc of blood removed. Complete blood counts and differentials, blood chemistry determinations for urea, nitrogen, creatinine and sugar were made on all patients. A urinalysis and any other such work-up as deemed advisable were undertaken. The blood serology was checked on all patients as indicated by the report on the admission record and rechecked by another serologic examination of the blood. Finally, all the patients were typed; the typing being recorded in the International and Moss Classifications.

The blood bank is now in operation. Twelve transfusions have been successfully performed during the last several months. This is especially significant when compared with the failure to give any transfusion during the previous five years, from 1931 to 1938. The citrate method

of transfusion has been used to date and will probably be used exclusively because of the unique circumstances of our blood bank.

The authors wish to point out the possibility of development of a living blood bank in institutions, especially institutions for mental patients. Such a blood bank can be of mutual benefit to the hypertensive patient as well as the recipient.

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THE PITTSBURGH CHAMBER OF COMMERCE OPPOSES GOVERNMENT MEDICINE

The following resolution was adopted by the Chamber of Commerce and forwarded to the President of the United States and all members of Congress from Pennsylvania.

"The Pittsburgh Chamber of Commerce, whose civic program on public health work has brought it into frequent contact with the medical profession and its various associations, wishes to publicly express its confidence in the principles and the purposes of the American Medical Association and the various affiliated medical groups that have been charged with violation of the Federal Anti-Trust Laws.

"The Chamber of Commerce feels that organized medicine is not hostile to, or active against, any adequate plan for bringing medical and hospital service to the public at reasonable cost. We cite in support of this stand the current cooperation of the Allegheny County Medical Society with Pennsylvania's Public Assistance Plan for Care of the Indigent Sick; its acceptance of group hospitalization insurance and its proposal to consider insured medical service for certain low income groups.

"This Chamber, however, stands with the Allegheny County Medical Society and other medical associations in opposing centralized government control through socialistic measures. We believe that such direction and control will prove extravagant and wasteful and is opposed to efficient service. It also tends to compete with current forms of medical practice and hospital service which are now under local and state sponsorship and is but another step toward un-American socialization of our accepted form of Government."

THE PHYSICIAN'S WIFE

"Many a flower is born to blush unseen" might apply to a physician's wife. Much has been said about the physician being this and the physician being that but nary a word about the physician's wife, which only goes to show that there are still acres of diamonds that poets might eulogize in meter and rhyme, or that painters might use as a type of grace and charm, or musicians eulogize in some sweet symphony.

It is interesting to study physicians' wives. The blushing bride comes first and she is a blushing bride—and why not—she is the wife of a physician and proud of it. Strange as it may seem, there is still left in the world a faint halo about a physician, a lawyer, and a preacher—the professional man is still regarded as a good catch. But the honeymoon fades for physicians' wives the same as for other wives. Life quickly becomes real.

In motherhood she portrays her beauty, courage and strength. The physician is usually poor; finances run low; babies come; there is housework to do; the children's school days arrive; telephone calls must be answered and calls listed; the children's cuts, bruises and "tummy-aches" must be attended to and usually by the physician's wife. Neighbors must be satisfied; sewing circles, bridge luncheons, and church affairs demand her attention. Then too, her great problem is the physician himself. She is always solicitous of his rest, his food, his clothing, his hair cuts, his general appearance, his comfortable chair, and his reading material. She brings him the kind of innocent gossip he likes, is the inspiration when things are on the downgrade, suggests a change of pasture for him from the daily grind, lends that professional aid that at times is needed in the office, and last, but not least, is to be commended for living with him when through fatigue he becomes cross and irritable. It is also interesting to observe the defense mechanism which she uses to protect his follies and shortcomings.

Socially and culturally the physician's wife represents a cross section of society. She may find time for art, literature, or music. She may go in for swimming, dancing, tennis, golf, or horseback riding. She may have her flower gardens, special arts and crafts, needlework and embroidery, reading or writing. She may hold strong religious tenets and find outlet in community activities. She is faithful to her auxiliary, is a good mixer, and she may be politically inclined. Generally, she is a pal for her husband in the serious as well as the lighter things of life. Like a good dancer she adapts herself to the leader, his moods, his temperament, his likes, and dislikes. Yet beneath all of these she retains her ego, pride and dynamic personality.

Then, as the years go by, there is the dear, sweet person that nature has provided with the "foundations and settings" to begin the life of an elderly person, that type of person whose eyes are so understanding, whose voice is kind and gentle, whose smile breaks the wrinkles of her cares and worries of yesterday—the

woman whose life has been one of courage, fidelity, steadfastness, and loyalty to the old gentleman over there whose eyes are still keen but whose steps falter and whose hands shake. Yes, she is the physician's wife.—*Penn. Medical Journal*.

REFRIGERATE CANCER IN NEW TREATMENT

(Copyright, 1939, by Science Service)

RICHMOND.—Refrigeration, involving "artificial hibernation" is a helpful aid in the treatment of human cancer, Dr. Lawrence W. Smith, of Temple University School of Medicine, Philadelphia, told the American Association for Cancer Research. But it is by no means a cure.

This low temperature "cold" treatment tried on more than 30 cases of inoperable cancer, Dr. Smith reported, gave these results:

Prompt reduction in pain; reduction in size of the local lesion; general improvement in the patient's condition; tendency toward healing of ulcerative and fistulous lesions; and a retardation in recurrences and in the rate of growth of such recurrent lesions.

The refrigeration treatment is applied locally directly to the cancer, or the temperature throughout the body generally is reduced by "artificial hibernation." The treatment is based on evidence that temperature is an important factor in the activation of embryonic cell growth and that there are very definitely "critical" levels of temperature which have a much narrower range for young cells like cancer cells than for adult differential cells.

Dr. Smith suggests that refrigeration treatment should be made a definite part of cancer treatment, not as a cure in itself but as an adjunct to x-ray treatment and surgery.

Marriages

FREDERICK CHRISTOPHER to Miss Dorothy Watt, both of Evanston, Ill., May 19.

SILVIO ERRICO to Miss Marguerite E. De Greve, both of Moline, Ill., May 4.

JACOB SALVATORE DIGATE to Miss Edith Alberts, both of Chicago, March 18.

FREDERICK RUSSELL HASELTON, Lieutenant Commander, U. S. Navy, to Mrs. Ebba Hovey Hall at Great Lakes, Ill., April 14.

CLEMENT P. O'NEILL, Rock Island, Ill., to Miss Baptista Hummer of Davenport, Iowa, April 10.

JAMES B. WALLER, Decatur, Ill., to Miss Esther Behnke of Whittemore, Iowa, in April.

Personals

Dr. Gustavus M. Blech has been awarded by the city of Langres, France, famous as the birthplace of the philosopher Diderot, the distinction of Honorary Citizen of that city by decree of April 11, 1939.

Dr. Max Thorek has been made Corresponding Academician of the National Academy of Sciences of Mexico.

Dr. Doris Hopkins and Dr. Leon Unger delivered a paper "Is Asthma an Indication for Abortion" before the Chicago Society of Allergy on Monday, April 24, 1939.

Dr. James H. Hutton has been invited to meet with the Stephenson County Medical Society at Freeport on May 25 and discuss "What the State and the A. M. A. are Doing About the Socialization of Medicine."

Dr. Don C. Sutton addressed the South Dakota State Medical Association Aberdeen, South Dakota, April 25, subject: Arteriosclerosis, Etiology Symptoms and Treatment; and discussed Continued Fever.

Dr. Leon Unger has been invited to address the Hancock County Medical Society on May 8, subject, "Allergy."

Dr. James Herbert Mitchell will be the guest of honor and speaker at the Bureau County Medical Society on May 9; he will talk on "Diagnosis and Treatment of Common Dermatitis."

Dr. I. Michael Levin will address the Union County Medical Society on May 11, subject, "Heart Disease in Childhood."

Dr. Lee C. Gatewood has been invited to address the Kankakee County Medical Society on May 11, subject, "Jaundice, Its Causation and Clinical Study."

Dr. J. D. Kirshbaum gave a paper on Toxic Hepatitis May 9 before the McLean County Medical Society at Bloomington, Illinois.

Dr. M. A. Perlstein has been invited to talk before the Coles-Cumberland County Medical Society on May 24. He will talk on "Sulfapyridine with Special Reference to its use in Pneumonia."

Dr. Oscar B. Nugent addressed the New Mexico State Medical Society, Gallup, New Mexico,

on May 11, on the subject of "Eye Conditions of Interest to the General Physician."

Dr. Henry Schmitz spoke before the Madison County Medical Society, Anderson, Indiana, May 22. The title of his address was "The Use of X-ray Therapy in the Treatment of Pelvic Diseases."

Drs. Emil Hauser and Walter Fischer will share in a symposium on orthopedics to be given before the Madison County Medical Society on June 2. Dr. Hauser will talk on "Disarrangements of the Knee Joints" and Dr. Fischer on Common Disorders of the Feet."

Drs. M. H. Streicher will address the St. Clair County Medical Society, June 1, "Diseases of the Colon and Rectum and Proctoscopic Examinations."

Dr. Tell Nelson is scheduled to address the Fulton County Medical Society at Canton, June 2, subject "Allergy in General Practice."

Dr. Clayton J. Lundy spoke before the Toledo Academy of Medicine, May 12. The subject was rheumatic heart disease and included his new movie reel on the "Electrocardiographic Diagnosis of Rheumatic Heart Disease."

Dr. Willard VanHazel is scheduled to talk on "Surgical Treatment of Pulmonary Tuberculosis" before the Marion County Medical Society on May 25.

Drs. H. E. Davis and John A. Wolfer will present a cancer program before the doctors of the Henry County Medical Society at Kewanee on May 25.

Dr. Walter C. Earl, Cuernavaca, Morelos, Mexico, has been appointed director of the Champaign-Urbana health district it was recently reported.

Dr. Julius B. Stokes has resigned as superintendent of the Livingston County Sanatorium, Pontiac, effective April 1.

Drs. Howard A. Rusk and Harold G. Newman, St. Louis, addressed the Marion County Medical Society, Centralia, April 20, on "Diagnosis and Treatment of Undulant Fever."

Dr. Albert C. Baxter, acting director of the Illinois State Department of Health since the resignation of Dr. Frank Jirka in 1937, has been

appointed head of the department, newspapers reported May 4.

Dr. Charles E. Galloway, Evanston, Ill., discussed "Pathology of the Cervix" before the Sangamon County Medical Society, Springfield, April 6.

The Chicago Pathological Society was addressed at its annual meeting May 8, among others, by Drs. Edwin F. Hirsch and Russell H. Morgan on "The Causal Significance to Traumatic Ossification of the Fibrocartilage in Tendon Insertions."

Dr. Albert Graeme Mitchell, Cincinnati, will speak on "What I Don't Know About Endocrines" before the Chicago Pediatric Society May 23.

At a meeting of the Chicago Ophthalmological Society May 8, the speakers were Drs. Harry S. Gradle and Daniel Snyder on "Report of Three Cases of Retinal Detachment Occurring in Glaucoma;" Arthur Weil and Leo L. Mayer, "Attempts to Produce Experimental Tumors of the Eyeball," and Stephan van Wien, "The Leland Refractor; A Method for Refraction Under Binocular Conditions."

Dr. Roland M. Klemme, St. Louis, discussed "Neuralgias of the Head and Face; Differential Diagnosis and Treatment" before the Adams County Medical Society, Quincy, April 10. Dr. Franklin E. Walton, St. Louis, discussed "The Surgeon's Approach to Diseases of the Gallbladder" before the society recently.

The Peoria City Medical Society was addressed March 21 by Dr. James H. Hutton, Chicago, on "Diagnosis and Treatment of Neglected Endocrinopathies;" March 7 by Dr. Raymond M. Rice, Indianapolis, "Clinical Use of Female Sex Hormones," and February 21 by Dr. August A. Werner, St. Louis, "Influence of the Endocrines on Growth and Development."

Mrs. Della Gahagan, 5550 Kenmore avenue, widow of Dr. Henry J. Gahagan, psychiatrist, was notified recently that special recognition of carrier May 13 and it turned out to be positive. There was nothing to identify the source of the specimen. The postmark was not legible and the physician who sent the specimen failed to give his own name or that of the patient.

Dr. Max Cutler, director of the Chicago Tu-

mor Institute, recently returned from a cruise around South America in which he gave nine addresses before medical associations and universities. The Chicago Tumor Institute has granted one fellowship to each of the South American countries for graduate instruction in the field of cancer. The fellows will be selected by the deans of the medical schools and the ministers of health.

Dr. William F. Scott, Maywood, for many years chief of staff of the Oak Park Hospital, her husband's long services to the state has been paid in the Illinois exhibits at the New York and San Francisco fairs.

The identical exhibits are pictorial representations of what the Illinois welfare department is doing to aid the state's afflicted persons. Included is a large color photograph of a cottage at the Elgin state hospital, which was erected as a memorial to Dr. Gahagan.

Dr. Gahagan, who formerly headed the Elgin hospital staff, was killed by an automobile Nov. 9, 1936.

News Notes

Dr. Albert Szent-Gyorgyi, professor of medical chemistry, Royal Hungarian Franz Josef University, Szeged, Hungary, will lecture in the Palmer House May 26 under the auspices of the Institute of Medicine of Chicago, on "The Mechanism of Biological Oxidation."

Dr. John Alexander, professor of surgery, University of Michigan School of Medicine, Ann Arbor, will deliver the annual Hedblom lecture sponsored by the Phi Beta Pi Fraternity of the University of Illinois College of Medicine May 17. His subject will be "The Management of Bronchiectasis and Abscess of the Lung."

The state department of public health is trying to find an unidentified typhoid carrier somewhere in Illinois and thereby avert a possible outbreak of the disease. The state diagnostic laboratory received a specimen for examination for a typhoid was guest of honor at a dinner April 26 given by the Sisters of Misericorde in honor of his many years of service as chief of the staff of the hospital. Members of the staff presented to the hospital an oil portrait of Dr. Scott, which is to be hung in the hospital gallery, and Dr.

Scott was presented with a memorial volume containing the signatures of his friends and associates. Dr. Austin A. Hayden, Chicago, was toastmaster.

Dr. James B. Herrick, Chicago, was voted the American Medical Association distinguished service award for outstanding work in the field of medicine.

Dr. Herrick has been an attending physician at Presbyterian Hospital, Chicago, since 1895, and is known for his work in coronary thrombosis—a blood clot in the heart and a frequent cause of death in elderly persons.

Members of the House of Delegates selected Dr. Herrick by 81 votes from among three candidates chosen by the association's board of trustees. The others were Dr. Chevalier Jackson, 74, Philadelphia, who was second in the balloting with 79 votes, and Dr. Edward Jackson, surgeon at the Wills Eye Hospital, Philadelphia, who was eliminated in early voting.

Dr. Herrick was born in Oak Park, Ill., Aug. 11, 1861, was graduated from the University of Michigan and Rush Medical College, and served his internship in Chicago. He is an honorary member of the New York Academy of Medicine and the author of a handbook on medical diagnosis.

Dr. Chevalier Jackson is known for his work in bronchoscopy, removal of foreign bodies from the lungs by tubes through the mouth. He has the decorations of an officer of the French Legion of Honor and a commander of the Order of the Crown of Italy. Dr. Jackson, author of several books on bronchoscopy, is a graduate of the Temple University School of Medicine.

Formal presentation of the award will be made at the first general session of the association.

WANTED—Back numbers of the JOURNAL. We have several requests from libraries for the March, 1937, issue. We have also many requests on file from universities and libraries for all numbers and volumes of the ILLINOIS MEDICAL JOURNAL issued previous to 1916. Communicate with us at 6221 Kenmore Avenue, Chicago, Illinois.

Deaths

FRANCIS EARLE BRIGGS, Ludlow, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of

the University of Illinois, 1907; member of the Illinois State Medical Society; aged 56; died, February 2, of carcinoma of the stomach.

CHESTER ROY BRIGHAM, Polo, Ill.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1905; member of the Illinois State Medical Society; served during the World War; aged 66; died, February 27, of coronary thrombosis.

JOHN F. COURTNEY, Joliet, Ill.; Chicago Homeopathic Medical College, 1894; member of the Illinois State Medical Society; aged 77; died, Dec. 27, 1938.

NOBLE MURRAY EBERHART, Chicago; Bennett Medical College, Chicago, 1894; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois; a Fellow A. M. A.; director of the x-ray laboratory and head of the department of physiological therapeutics, Loyola University School of Medicine, 1911-1913, and professor of electrophysics, Post-Graduate Medical School, 1902-1905; at various times professor and head of the department of electrotherapy, American College of Medicine and Surgery, Medical Department of the Valparaiso University, and Chicago College of Medicine and Surgery, Medical Department of Valparaiso University; president of the North Shore Branch, 1912-1913, and member of the Council, Chicago Medical Society, 1913-1915; author of "Manual of High Frequency Currents," which passed through eight editions; aged 68; died, February 9, of epithelioma of the left hand with metastasis.

VERNON SYLVESTER FILDES, Olney, Ill.; Washington University School of Medicine, St. Louis, 1905; member of the Illinois State Medical Society; aged 57; died, February 4, in the Olney Sanitarium, of bronchopneumonia and cerebral hemorrhage.

JACOB C. FULTS, Waterloo, Ill.; St. Louis Medical College, 1885; aged 77; died, January 30, at Shelbyville, Ind., of a cerebral hemorrhage.

RANDOLPH MOORE GILLIAM, Chicago; University of Virginia Department of Medicine, Charlottesville, 1919; aged 43; died, January 14, in the University Hospital, Charlottesville, Va., of rheumatic heart disease.

ALFRED M. HOUSTON, Joliet, Ill.; Hahnemann Medical College and Hospital, Chicago, 1904; a Fellow A. M. A.; on the staffs of the Silver Cross Hospital and St. Joseph's Hospital; aged 63; died, February 9, of sarcoma of the maxilla.

HENRY EBEN HUNT, Roodhouse, Ill.; Northwestern University Medical School, Chicago, 1896; aged 66; died, February 8, in Our Saviour's Hospital, Jacksonville, of carcinoma of the rectum.

HARRY CULLEN KARIHER, Champaign, Ill.; Rush Medical College, Chicago, 1903; member of the Illinois State Medical Society; past president of the Champaign County Medical Society; served during the World War; aged 59; on the staff of the Burnham City Hospital, where he died, February 5.

GEORGE L. McLAUGHLIN, Chicago; Rush Medical College, 1900; member of Illinois State Medical So-

ciety; aged 63; died, January 18, in Rochester, Minn., of carcinoma of the colon.

ANNIE M. MENNIE, Chicago; Illinois Medical College, Chicago, 1901; aged 72; died, February 11, in the Washington Boulevard Hospital, of carcinomatosis.

WILLIAM EDWARD MORGAN, Chicago; Chicago Medical College, 1882; prosector in anatomy, 1881-1882, demonstrator in anatomy in 1885, demonstrator in operative surgery in 1887, professor of surgical anatomy and operative surgery in 1892, professor of clinical surgery, 1902-1920, and in 1924 was appointed medical counselor at his alma mater; professor of general and clinical surgery, Loyola University School of Medicine, 1920-1929, and since 1929 professor emeritus; past president of the Chicago Surgical Society; formerly on the staffs of the Mercy Hospital, Englewood Hospital, German Deaconess Hospital, Provident Hospital, Washington Park Hospital and the Jackson Park Hospital; aged 80; died, April 25, of chronic myocarditis and arteriosclerosis.

JOHN FORSTER ORR, Chicago; Victoria University Medical Department, Coburg, Ont., Canada, 1886; aged 80; died, January 8 of myocarditis and arteriosclerosis.

DAVID W. REID, Jacksonville, Ill.; Chicago Homeopathic Medical College, 1889; member of the Illinois State Medical Society; on the staff of the Passavant Memorial Hospital; aged 83; died, January 15, of bilateral bronchopneumonia.

DARWIN SCHIOTT, Champaign, Ill.; Homeopathic Medical College of Missouri, St. Louis, 1903; served in the World War; aged 58; died, January 30, in Burnham City Hospital of cirrhosis of the liver.

FRANK EDWARD SCIIRAM, Chicago; Chicago College of Medicine and Surgery, a Fellow, A. M. A.; 1915; served during the World War; aged 49; died, January 16, in St. Luke's Hospital following an operation for acute appendicitis.

LEO STEINER, Chicago; Jenner Medical College, Chicago, 1906; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; member of the Illinois State Medical Society; instructor in medicine, 1911-1913, instructor in materia medica, 1913-1914, associate professor of materia medica and therapeutics, 1914-1915, and professor of materia medica and therapeutics, 1915-1916, Bennett Medical College; formerly superintendent of the Illinois Eye and Ear Infirmary; aged 55; died, January 7, of carcinoma of the colon with metastases to the liver.

CLARENCE A. WELLS, Quincy, Ill.; Missouri Medical College, St. Louis, 1897; a Fellow, A. M. A.; aged 68; on the staffs of the Blessing Hospital and St. Mary's Hospital, where he died, January 15, of injuries received in a fall.

WILLIAM MANNEN YOUNG, Bloomington, Ill.; Eclectic Medical Institute, Cincinnati, 1897; member of the Illinois State Medical Society; on the staffs of St. Joseph's Hospital and Mennonite Hospital; aged 71; died, January 19, of heart disease.

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BUYERS INDEX

ABDOMINAL SUPPORTERS

S. H. Camp & Co., Jackson, Mich..... 10

FOODS

Coca-Cola Co., Atlanta, Ga..... 15
 Corn Products Refining Co., New York City..... 8
 R. B. Davis Co., Hohoken, N. J.....
 Knox Gelatine Laboratories, Johnstown, N. Y.....
 Mead, Johnson & Co., Evansville, Ind..... 17
 S. M. A. Corporation, Cleveland..... 7

FINANCIAL AND INSURANCE

Medical Protective Co., Fort Wayne, Ind..... 26
 Physicians Casualty Co., Omaha, Neb..... 23

HOSPITALS

Stokes Hospital, Louisville, Ky..... 23
 Summit Hospital, Oconomowoc, Wis..... 24

INSTITUTE

Chicago Tumor Institute, 21 West Elm St..... 23

PHARMACEUTICALS

Alba Pharmaceutical Co., 80 Varick St., New York City...
 American Agency, French Vichy, Brooklyn, N. Y.....
 American Can Co., 230 Park Ave., New York City..... 3
 Armour & Co., Chicago.....
 Ernst Bischoff, Ivoryton, Conn.....
 Bovinine Company, Chicago..... 14
 Bristol-Myers Co., New York.....
 Carnrick, G. W., Co., 20 Mt. Pleasant Ave., Newark, N. J... 24
 Ciha Company, Cedar and Washington St., New York City ..
 Crookes Laboratories, New York City.....
 Denver Chemical Co..... 27
 E. Fougere & Co.....
 Gold Pharmacal Co., New York City..... 15
 Harrower Laboratory 25
 Hoffman-LaRoche, Inc., Nutley, N. J..... 13
 Hynson, Westcott & Dunning, Charles and Chase Sts.,
 Baltimore 26

Lederle Laboratories, 30 Rockefeller Plaza, New York.... 31
 Lilly, Eli, & Co., Indianapolis, Ind..... 16
 Maggot Products Co..... 20, 21
 Morris, Philip, & Co., 19 Fifth Ave., New York.....
 Nutrition Research Laboratories, 332 S. Michigan Ave.,
 Chicago
 Parke, Davis & Co., Detroit, Mich..... 5
 Petrolagar Laboratories, 8134 McCormick Blvd., Chicago.... 4
 Reed & Carnrick, Jersey City, N. J.....
 Roche Organon, Inc., Nutley, N. J..... 2
 Schering & Glatz, Inc., New York City.....
 G. D. Searle & Co., 4737 Ravenswood Ave., Chicago.....
 Sharp & Dohme, 111 N. Canal St., Chicago..... 6
 E. R. Squibb & Sons, New York..... 9
 Frederick Stearns & Sons, New York..... 13
 Wm. R. Warner & Co., 113 W. 118th St., New York City.. 12
 Winthrop Chemical Co., 170 Varick St., New York City.... 11
 Zemmer Co., Pittsburgh, Pa..... 22

SANATORIA AND SANITARIA

Edward Sanatorium, Naperville, Ill..... 25
 Kenilworth Sanitarium, Kenilworth, Ill..... 22
 Michell Farm Sanatorium, Peoria, Ill..... 32
 Milwaukee Sanitarium, Wauwatosa, Wis..... Front Cover
 Norbury Sanitarium, Jacksonville, Ill..... 22
 North Shore Health Resort, Winnetka..... 25
 Rogers Memorial Sanitarium, Oconomowoc, Wis..... 32
 Waukesha Springs Sanitarium, Waukesha, Wis..... 22
 Weirick's Sanitarium, Elgin, Ill..... 23

RADIUM

Physicians Radium Assn., 55 E. Washington St., Chicago.. 23

SURGICAL SUPPLIES

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WASHINGTON—Cases of infantile paralysis often come in pairs—two cases in the same family, two cases in different families in the same dwelling, two cases in a children's institution, three cases from adjoining houses. This has been the situation in the District of Columbia in the period between 1925 and 1938, according to survey figures announced here by the U. S. Public Health Service.

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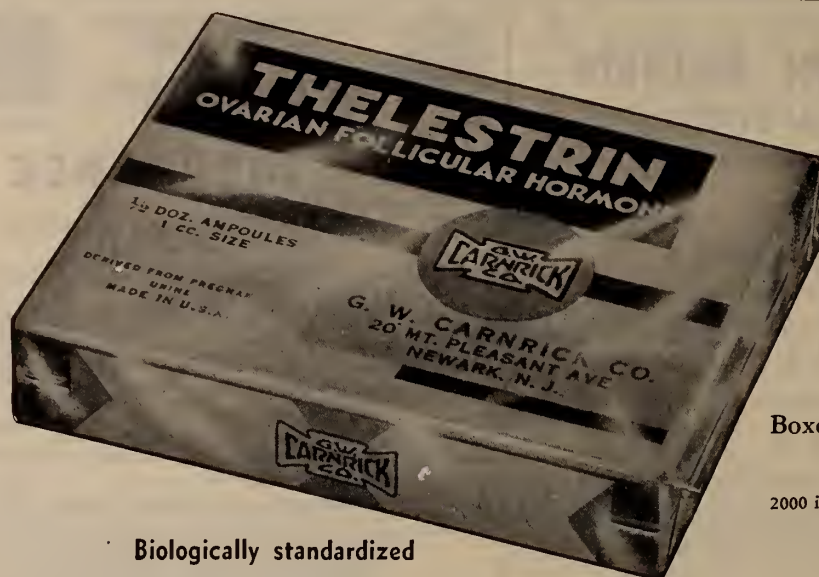
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POPULATION TREND ANALYZED IN BOOK (Copyright, 1939, by Science Service)

WASHINGTON—The stork visits the homes of the very poor and the ignorant with much more frequency than he lights on the homes of the educated and wealthy. This discrimination may be laid directly at the door of birth control and the American habit of postponing marriage, new scientific research has revealed. This research is published in a new book, "The Natural History of Population" just published by the Oxford Press.

Analyzing an intimate study of more than 30,000 mothers, the author, Prof. Raymond Pearl, biologist

and student of population of the Johns Hopkins University, found no evidence of any biological inferiority among the wealthy to account for their diminishing families. Neither does religion play any important part in these differential birth rates.

If it were not for the effect of birth control efforts, Prof. Pearl said, and the practice of criminal abortion, together with habits of postponing marriage, there would apparently be little or no significant differential fertility between economic, educational or religious classes of urban American married couples.

Nearly half (43 per cent.) of the American white women studied by Prof. Pearl practice birth control.

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CONTENTS—Continued

Institutional Blood Banks. *H. H. Goldstein, M. D., L. Alsmann, M. D., and J. B. Edlin, M. D., Chicago*..... 502

EDITORIALS

Living on Ideals.....	481
Looking Backward 99 Years.....	481
A. M. A. Disapproves Health Bill.....	487
1939 Annual Meeting	490
Political Medicine and Public Health.....	492
Medical Economics. <i>E. S. Hamilton, M. D.</i>	495
Been Pushed Around. <i>H. L. Mencken</i>	496

CORRESPONDENCE

Scientific Service Committee. <i>R. S. Berghoff, M. D.</i>	498
Educational Committee. April and May.....	500
Postgraduate Obstetrics	501
American Board of Obstetrics.....	502
Cardiography	502
University of Illinois Course in Syphilis.....	502

SOCIETY PROCEEDINGS

Marriages	565
Personals	565
News Notes	567
Deaths	567

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DOCTORS PREDICT RACIAL RECESSION

CINCINNATI—People of the future are probably going to be smaller in stature and are going to have fewer children. This prediction of what is termed "a considerable expansion of the racial recession now being observed throughout the world" was made here by two medical scientists of the University of Cincinnati, Drs. Clarence A. Mills and Laurence B. Chenoweth.

The climate will be to blame for the decrease in human stature and fertility the scientists believe.

The average height of American college men has increased about two inches in the past 50 years, but there are already signs that this trend is decreasing, the doctors report. They found 1937 University of Cincinnati freshmen lighter in weight than any entering class since 1930 and shorter than any class entering since 1934.

Drs. Mills and Chenoweth believe rising temperatures in recent years have tended to halt what had seemed to be a notable increase in height and weight of college students. This increase has been attributed, it is pointed out, to dietary and hygienic improvements.

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Clinton	H. B. Warren, Breese	J. Q. Roane, Carlyle.
Coles-Cumberland	Martin Bisson, Charleston	W. F. Stafford, Mattoon.
Cook	Robert H. Hayes, Chicago	F. F. Maple, Chicago.
Crawford	J. H. Price, Robinson	J. W. Long, Robinson.
De Kalb	E. W. Telford, Dekalb	Carl E. Clark, Sycamore.
De Witt	C. E. Carter, Clinton	Wm. R. Marshall, Clinton.
Douglas	Carlton R. Smith, Villa Grove	J. O. Cletcher, Tuscola.
Du Page	Ernest S. Watson, Elmhurst	A. R. Rikli, Naperville.
Edgar	Nettie M. Dorris, Paris	J. J. Murphy, Paris.
Edwards	A. J. Boston, Albion	R. L. Motor, Albion.
Effingham	S. J. Hanson, Effingham	G. Marshall, Effingham.
Fayette	M. Greer, Vandalia	E. A. Kuehn, Vandalia.
Ford	S. B. Furby, Paxton	M. D. E. Peterson, Paxton.
Franklin	Geo. Burkhardt, Benton	C. P. Holoffe, West Frankfort.
Fulton	H. C. Putman, Canton	O. M. Wood, Ipava.
Gallatin	J. C. Murphy, Ridgway	E. W. Burroughs, Ridgway.
Greene	W. T. Stickley, White Hall	W. H. Garrison, White Hall.
Hancock	R. R. Loomis, Warsaw	W. P. Frazier, Carthage.
Hardin	L. D. Dusch, Golconda	H. H. Watson, Elizabethtown.
Henderson	C. J. Eads, Okawaka	J. H. Murray, Stronghurst.
Henry	C. A. Coffin, Kewanee	J. F. Harris, Richmond.
Iroquois	N. O. Hungness, Sheldon	L. E. Messman, Onarga.
Jackson	Ben Fox, Carbondale	Edward K. Ellis, Murphysboro.
Jasper	D. R. Martin, Newton	R. S. Wishard, Wheeler.
Jefferson Hamilton	C. J. Anslinger, Mt. Vernon	Andy Hall, Mt. Vernon.
Jersey	H. R. Gledhill, Jerseyville	R. G. Mindrup, Jerseyville.
Jo Daviess	B. C. McGinnis, Warren	R. E. Logan, Galena.
Johnson	Wm. Thompson, Cypress	E. A. Veach, Vlenna.
Kane	H. T. Mostrom, Batavia	K. M. Manougan, Elgin.
Kankakee	A. L. Nickerson, Kankakee	Chas. Allison, Kankakee.
Kendall	No Society.	
Knox	Louis N. Tate, Galesburg	Wm. F. Maley, Galesburg.
Lake	L. E. Bovik, Waukegan	M. T. Brown, Zion City.
La Salle	W. P. Fread, Ottawa	Roswell T. Pettit, Ottawa.
Lawrence	E. M. Cooley, Lawrenceville	Ralph B. Armitage, Lawrenceville.
Lee	C. G. Pool, Compton	J. L. Tavenner, Dixon.
Livingston	H. L. Lockner, Chatsworth	J. G. Barnheiser, Pontiac.
Logan	Leroy Brannon, Lincoln	Lee N. Hamm, Lincoln.
McDonough	R. O. Stites, Industry	Wm. M. Hartman, Macomb.
McHenry	Geo. H. Pfueger, Crystal Lake	J. F. Harris, Richmond.
McLean	H. W. Wellmerding, Bloomington	H. P. Sloan, Bloomington.
Macon	S. J. Finney, Decatur	F. R. Martin, Decatur.
Macoupin	J. H. Girard	J. J. Grandone, Gillespie.
Madison	R. L. Berry, Livingston	D. D. Monroe, Alton.
Marion	H. E. Ryan, Centralia	E. N. Weber, Centralia.
Mason	F. J. Corey, Havana	D. V. Auld, Havana.
Massac	W. S. Dixon, Metropolis	J. H. Gann, Brookport
Menard	Irving Newcomer, Petersburg	R. E. Valentine, Tallula.
Mercer	L. E. Robinson, Aledo	V. A. McClanahan, Aledo.
Monroe	E. T. Lark, Columbia	J. A. Werth, Waterloo.
Montgomery	Geo. A. Telfer, Hillsboro	H. F. Bennett, Litchfield.
Morgan	G. L. Drennan, Jacksonville	Friedrich Engelback, Jacksonville.

(Continued from page 28)

Moultrie	S. H. Ambrose, Lovington.....	W. B. Kilton, Sullivan.
Ogle	G. S. Henderson, Holcomb.....	A. R. Bogue, Rochelle.
Peoria	H. B. Magee, Peoria.....	C. W. Magaret, Peoria.
Perry	Geo. H. Gutridge, DuQuoin.....	H. I. Stevens, Tamaroa.
Platt	W. N. Sievers, White Heath.....	J. M. Holmes, Monticello.
Pike	C. P. McRaven, Pittsfield.....	F. N. Wells, Pittsfield.
Pope	S. P. Ward, Golconda.....	L. S. Barger, Golconda.
Pulaski	Otis T. Hudson, Mounds.....	W. R. Wesenberg, Mound City.
Randolph	J. W. Beare, Chester.....	J. Omer Hoffman, Chester.
Richland	E. L. Williamson, Calhoun.....	Paul C. Weber, Olney.
Rock Island	Louis Ostrom, Rock Island.....	Paul Youngberg, Moline.
St. Clair	Lawrence A. Ryan, East St. Louis.	R. F. Sondag, East St. Louis.
Saline	Neva Skelton, Eldorado.....	Robert Ferrell, Eldorado.
Sangamon	E. L. Bernard, Springfield.....	E. H. Ennis, Springfield.
Schuyler	Geo. C. Bates, Rushville.....	A. W. Ball, Rushville.
Scott	No Society.	
Shelby	Theo. Thompson, Shelbyville.....	C. H. Hulck, Shelbyville.
Stephenson	John J. Grant, Freeport.....	C. M. Becker, Freeport.
Tazewell	C. A. Cox, Morton.....	C. A. Nelson, Pekin.
Union	M. E. Cosand, Dongola.....	W. J. Benner, Anna.
Vermilion	Robert Clements, Danville.....	A. R. Brandenberger, Danville.
Wabash	E. P. Keneipp, Mt. Carmel.....	H. A. Elkins, Mt. Carmel.
Warren	H. L. Kampen, Monmouth.....	Chas. P. Blair, Monmouth.
Washington	P. B. Rabenneck, Nashville.....	G. A. Green, Nashville.
Wayne	G. Ray Hill, Fairfield.....	J. T. Blakely, Fairfield.
White	Frank C. Sibley, Carmi.....	J. A. Legier, Carmi.
Whiteside	Neal J. Marquis, Sterling.....	G. J. Pohly, Rock Falls.
Will-Grundy	Geo. Woodruff, Joliet.....	Earl Leimbacher, Joliet.
Williamson	R. L. Kane, Herrin.....	J. W. Tidwell, Herrin.
Winnebago	N. C. Bullock, Rockford.....	Wm. K. Ford, Rockford.
Woodford	Ernest Pearson, Eureka.....	W. S. Morrison, Minonk.

Book Reviews

YOU CAN'T EAT THAT! By Helen Morgan. Foreword by Dr. Walter C. Alvarez. New York. Harcourt, Brace and Company. 1939. Price \$2.50.

This work is a manual and recipe book for those who suffer either acutely or mildly (and perhaps unconsciously) from food allergy. It tells what allergies are, what causes them, how science is investigating them, how they are diagnosed, and how they are treated.

MANUAL OF TOXICOLOGY. By Forrest Ramon Davison, Ph.D. With a Foreword by David Marvin, M. D. New York. Paul B. Hoeber, Inc. 1939. Price, \$2.50.

An outstanding feature of this manual is the emphasis placed on the clinical side of toxicology, an emphasis neglected on most of the shorter texts on this subject. Symptoms and their treatments are described in sufficient detail to be of practical value. Discussion of the fatal dose, the necropsy findings, and the organs best suited for toxicological examination are included under the discussion of each poison.

MEDICAL VOCABULARY. By Joseph S. F. Marie. A Foreword by Chevalier Jackson, M. D. Philadelphia. P. Blakiston's Son & Co., Inc. 1939. Price, \$3.00.

This work presents a selection of medical words with their translation from English into German, French, Italian and Spanish. It includes the names of many articles of common use in the hospitals and in general medical practice, also a collection of phrases considered of value in emergencies.

Physicians, medical editors, nurses and hospitals the world over will find this book useful in their varied activities. It simply and systematically presents in an alphabetical order English terms and their equivalents.

It contains 358 pages, is sturdily bound in washable fabric.

THE CLINICAL DIAGNOSIS OF SWELLINGS. By C. E. Corrigan, M. D. Baltimore. The Williams and Wilkins Company. 1939. Price, \$4.00.

This work presents a simple practical method of investigating swellings in order to clarify the problem of their diagnosis, to this end two basic principles have been utilized.

(1) Clinical methods alone, as opposed to laboratory aids, have been employed to provide the evidence for diagnosis.

(2) Physical signs have been given precedence over history and symptomatology, for in the case of swellings it applies more aptly than anywhere else that "One sign is worth ten symptoms."

The text is supported by a great number of line drawings that translate clinical manifestations into terms of anatomy and pathology.

PRECLINICAL MEDICINE, PRECLINICAL STATES AND PREVENTION OF DISEASE. By Malford W. Thewlis, M. D. Baltimore. The Williams & Wilkins Company. 1939. Price, \$3.00.

This work is an analysis of preclinical states to guide those interested in the prevention of disease. Methods of early recognition of disease are presented, special tests are recommended, and clear indications given for preclinical therapy and prevention of disease and suffering. The work shows how to reach the synthetic diagnosis which conceives of the person as a whole against the background of his family, heredity, racial factors, and considers his intellectual equipment, social adjustment, the climatic conditions, the influence of past diseases, etc.

Book Reviews

CANCER HANDBOOK OF THE TUMOR CLINIC STANFORD UNIVERSITY SCHOOL OF MEDICINE. Edited by Eric Liljencrantz, M. D. Stanford University Press. Price \$3.00.

This work is intended for a brief graduate course, the cancer handbook is elementary enough for any medical practitioner, yet complete enough to prepare the practitioner for adequate handling of patients as to cancer.

The methods outlined are founded on present practice at the Stanford University School of Medicine.

SHORT STATURE AND HEIGHT IN REASE. By C. J. Gerling. New York Harvest House. 1939. Price \$3.00.

This is the only book of its kind in any language. The work shows what science can and cannot do for short people.

CANCER HANDBOOK OF THE TUMOR CLINIC STANFORD UNIVERSITY SCHOOL OF MEDICINE. Edited by Eric Liljencrantz, M. D. Stanford University Press. Price \$3.00.

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The methods outlined are founded on present practice at the Stanford University School of Medicine.

SHORT STATURE AND HEIGHT INCREASE. By C. J. Gerling, New York Harvest House. 1939. Price \$3.00.

This is the only book of its kind in any language. The work shows what science can and cannot do for short people. 18 fact-filled Chapters on Glands and Growth, Height in Adults, Food and Growth, Inheritance of Stature, Age and Growth, Weight and Height, etc. Valuable information and expert advice on every phase of height and growth. Practical Chapters on Stature Aids, Devices and Height, Psychological Aids, Drugs and Height, etc. Pages packed with height helps, instructions, practices. Illustrated Chapters on Clothes and Height, Exercises and Height, Posture and Height, etc. Answers all questions on height-increasing methods and measures. Equally applicable to men and women. Also for parents concerned about the growth of their children.

PERSONAL AND COMMUNITY HEALTH. By C. E. Turner, Dr. P. H. Fifth Edition. St. Louis. The C. V. Mosby Company. 1939. Price \$3.00.

This edition presents material that has been brought close to the point of profession. Its coverage of all phases of personal hygiene and community hygiene make it complete. The data contained in this work tells what is the normal condition of the body and how to maintain this condition. The work is well illustrated, well arranged and up-to-date, this new edition, printed on eye toned paper, is an outstanding text book for the classroom.

POPULATION, RACE AND EUGENICS. By Morris Siegel, M. D. Hamilton, Ontario. Published by the Author. 1939. Price, \$3.00.

This is a work of 206 pages in five chapters. Chapter I, Population and Eugenics. Chapter II, Etiology; Chapter III, Constructive Recommendations; Chapter IV, Racial Theories in Relation to Eugenics; Chapter V, Rational Marriage.

THE KNACK OF SELLING YOURSELF. By James T. Mangan. Chicago-New York-London. The Dartnell Corporation. 1938. Price \$3.50.

In the whole history of literature not more than four important books have been written on the subject of Worldly Wisdom. Lord Chesterfield wrote one—which he never intended to see the light of day. In this work James Mangan comes forward with the boldest, most unashamed presentation of the galvanizing truth of self advantage and personal opportunity ever written. In every chapter you drink in Mangan's inspiring ideas and truth-drenched language. You won't find a single success story in the book, nor a personal anecdote about a millionaire or anybody else—it's all about you, and what you can and must do to make your way through the roaring traffic of this and the next five years.

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High cost of medical care! What a misnomer! I dare say there is not one physician in a hundred who in a financial sense ever justifies the investment in his education. It costs about \$25,000 to educate a doctor; to put him through his pre-medical and medical courses, internship, possibly the residency. He is lucky to meet his expenses the first few years of his practice. He is probably thirty years old before he makes a living. If he has twenty good years of earning capacity he is extremely fortunate; years in which he can put by enough for his old age, for doctors wear out like other folks do and he is not building up a business which works for him after he stops work. Once he slows down, so do the rewards which people pay him for the help he gives. Once he quits, so does all income. The average doctor never gets above the \$5,000 level; most are below that.

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